

David Misch

Publication List

Six publications with major impact for the work of GEOS4

- Liu, S., Misch, D., Gang, W., Li, J., Jin, J., Duan, Y., Xiang, B., Gao, G., Zhang, Y., Wang, M. & Fan, K. (2023) Evaluation of the tight oil "sweet spot" in the Middle Permian Lucaogou Formation (Jimusaer Sag, Junggar Basin, NW China): insights from organic petrology and geochemistry. *Organic Geochemistry*, 177, 104570. <https://doi.org/10.1016/j.orggeochem.2023.104570>
- Misch, D., Gross, D., Hawranek, G., Horsfield, B., Klaver J., Mendez-Martin, F., Urai J.L., Vranjes-Wessely, S., Sachsenhofer, R.F., Schmatz, J., Li J. & Zou C. (2019) Solid bitumen in shales: Petrographic characteristics and implications for reservoir characterization. *International Journal Coal Geology*, 205, 14-31. <https://doi.org/10.1016/j.coal.2019.02.012>
- Misch, D., Riedl, F., Liu, B., Horsfield, B., Ziegls, V., Mendez-Martin, F., Vranjes-Wessely, S. & Sachsenhofer, R.F. (2019) Petrographic and sorption-based characterization of bituminous organic matter in the Mandal Formation, Central Graben (Norway). *International Journal of Coal Geology*, 211, 103229. <https://doi.org/10.1016/j.coal.2019.103229>
- Misch, D., Mendez-Martin, F., Hawranek, G., Gross, D., Onuk, P. & Sachsenhofer, R.F. (2016) SEM and FIB-SEM investigations on potential gas shales in the Dniepr-Donets Basin (Ukraine): Pore space evolution in organic matter during thermal maturation. *IOP Conf. Ser.: Mat. Sci. Eng.*, 109, paper 012010. <https://doi.org/10.1088/1757-899X/109/1/012010>
- Misch, D., Gross D., Mahlstedt, N., Makogon, V. & Sachsenhofer, R.F. (2016) Shale Gas / Shale Oil Potential of Upper Visean Black Shales in the Dniepr-Donets Basin (Ukraine). *Marine and Petroleum Geology*, 75, 203-219. <https://doi.org/10.1016/j.marpetgeo.2016.04.017>
- Misch, D., Sachsenhofer, R.F., Bechtel, A, Gratzer, R., Gross, D. & Makogon, V. (2015) Oil/gas-source rock correlations in the Dniepr-Donets Basin (Ukraine): New insights into the petroleum system. *Marine and Petroleum Geology*, 67, 720-742. <https://doi.org/10.1016/j.marpetgeo.2015.07.002>

Publications in the order of publication date

2023

- Bensing, J., Misch, D., Skerbisch, L., Hujer, W., Gumpenberger, T., Mekonnen, E., Kostoglou, N. & Gier, S. (2023) Old core, new tricks: a comparative study of old and new mudstone cores for applications in the energy transition. *Geoenergy*, 1. <https://doi.org/10.1144/geoenergy2023-013>.

- Skerbisch, L., Misch, D., Drews, M., Stollhofen, H., Sachsenhofer, R.F., Arnberger, K., Schuller, V. & Zamolyi, A. (2023) Regional mudstone compaction trends in the Vienna Basin: top seal assessment and implications for uplift history. *International Journal of Earth Sciences*, 112, 1901-1921.
<https://doi.org/10.1007/s00531-023-02331-4>
- Han, L., Misch, D., Shen, J. & Ji, C. (2023) Influence of Viscous and Capillary Forces on Residual Water in Anthracite Fracture Networks. *Natural Resources Research*, 32, 603-617.
<https://doi.org/10.1007/s11053-022-10154-4>
- Ajuaba, S., Sachsenhofer, R.F., Meier, V., Gross, D., Schnyder, J., Moscariello, A., Omodeo Sale, S. & Misch, D. (2023) Coaly and lacustrine hydrocarbon source rocks in Permo-Carboniferous graben deposits (Weiach well, Northern Switzerland). *Marine and Petroleum Geology*, 150, 106147.
<https://doi.org/10.1016/j.marpetgeo.2023.106147>
- Shi, X., Misch, D. & Vranjes-Wessely, S. (2023) A comprehensive assessment of image processing variability in pore structural investigations: conventional thresholding vs. machine learning approaches. *Gas Science and Engineering*, 115, 205022.
<https://doi.org/10.1016/j.jgsce.2023.205022>

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- Zhang, P., Misch, D., Meng, Q., Sachsenhofer, R.F., Liu, Z., Jia, J., Gao, F. & Bechtel, A. (2022) Lateral changes of OM preservation in the lacustrine Qingshankou Formation (Cretaceous Songliao Basin, NE China): Evidence for basin segmentation. *International Journal of Coal Geology*, 254, 103984.
<https://doi.org/10.1016/j.coal.2022.103984>
- Freitag, S., Drews, M., Fazlikhani, H., Duschl, F., Bauer, W., Misch, D. & Stollhofen, H. (2022) New insights on Cretaceous paleo-thickness in Central Europe: Results from compaction and thermal history analyses of exhumed shales in the Franconian Basin, SE Germany. *Solid Earth*, 13, 1003-1026.
<https://doi.org/10.5194/se-13-1003-2022>
- Liu, S., Misch, D., Gao, G., Jin, J., Gang, W., Duan, Y., Wu, X., Xiang, B., Wang, M. & Luo, Q. (2022) Physical properties of lacustrine shale oil: A case study on the lower member of the Lucaogou Formation (Jimusaer Sag, Junggar Basin, NW China). *Marine and Petroleum Geology*, 145, 105888.
<https://doi.org/10.1016/j.marpetgeo.2022.105888>
- Liu, S., Gao, G., Jin, J., Misch, D., Wu, X., Gang, W., Wang, M., Xiang, B. & Ma, W. (2022) Mechanisms of differential enrichment of shale oil in the upper and lower members of the Lucaogou Formation in the Jimusaer Sag, Junggar Basin. *Marine and Petroleum Geology*, 142, 105747.
<https://doi.org/10.1016/j.marpetgeo.2022.105747>
- Bensing, J., Misch, D., Skerbisch, L. & Sachsenhofer, R.F. (2022) Hydrogen-induced calcite dissolution in Amaltheenton Formation claystones: Implications for underground hydrogen storage caprock integrity. *International Journal of Hydrogen Energy*, 47, 30621-30626.
<https://doi.org/10.1016/j.ijhydene.2022.07.023>

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- Misch, D., Siedl, W., Drews, M., Liu, B., Klaver, J., Pupp, M. & Sachsenhofer, R.F. (2021) Mineralogical, BIB-SEM and petrophysical data in seal rock analysis: A case study from the Vienna Basin, Austria. *Journal of Petroleum Geology*, 44, 25-46. <https://doi.org/10.1111/jpg.12777>
- Zhang, P., Meng, Q., Misch, D., Sachsenhofer, R.F., Liu, Z., Hu, F. & Shen, L. (2021) Oil shale potential of the lower cretaceous Jiufotang Formation, Beipiao Basin, Northeast China. *International Journal of Coal Geology*, 236, 103640. <https://doi.org/10.1016/j.coal.2020.103640>
- Zhang, P., Misch, D., Meng, Q., Bechtel, A., Sachsenhofer, R.F., Liu, Z., Gao, F., Hu, F., Zhang, S. & Tang, B. (2021) Comprehensive thermal maturity assessment in shales: a case study on the upper cretaceous Qingshankou formation (Songliao Basin, China). *International Journal of Earth Sciences*. <https://doi.org/10.1007/s00531-021-02000-4>
- Zhang, P., Misch, D., Hu, F., Kostoglou, N., Sachsenhofer, R.F., Liu, Z., Meng, Q. & Bechtel, A. (2021) Porosity evolution in organic matter-rich shales (Qingshankou Fm.; Songliao Basin, NE China): Implications for shale oil retention. *Marine and Petroleum Geology*, 130, 105139. <https://doi.org/10.1016/j.marpetgeo.2021.105139>
- Vranjes-Wessely, S., Misch, D., Kiener, D., Cordill, M.J., Frese, N., Beyer, A., Horsfield, B., Wang, C. & Sachsenhofer, R.F. (2021) High-speed nanoindentation mapping of organic matter-rich rocks: A critical evaluation by correlative imaging and machine learning data analysis. *International Journal of Coal Geology*, 247, 103847. <https://doi.org/10.1016/j.coal.2021.103847>

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- Vranjes-Wessely, S., Misch, D., Issa, I., Kiener, D., Fink, R., Seemann, T., Liu, B., Rantitsch, G. & Sachsenhofer, R.F. (2020) Nanoscale pore structure of Carboniferous coals from the Ukrainian Donets Basin: A combined HRTEM and gas sorption study. *International Journal of Coal Geology*, 224, 103484. <https://doi.org/10.1016/j.coal.2020.103484>
- Neumeister, S., Misch, D., Algeo, T.J., Gawlick, H.-J., Gratzner, R. & Sachsenhofer, R.F. (2020) Early diagenesis of organic-rich marls under shifting suboxic to euxinic conditions: The lower Toarcian of the Bächtental basin. *Marine and Petroleum Geology*, 120, 104513. <https://doi.org/10.1016/j.marpetgeo.2020.104513>

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- Misch, D., Gross, D., Hawranek, G., Horsfield, B., Klaver J., Mendez-Martin, F., Urai J.L., Vranjes-Wessely, S., Sachsenhofer, R.F., Schmatz, J., Li, J. & Zou C. (2019) Solid bitumen in shales: Petrographic characteristics and implications for reservoir characterization. *International Journal Coal Geology*, 205, 14-31. <https://doi.org/10.1016/j.coal.2019.02.012>

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Misch, D., Klaver, J., Gross, D., Mayer-Kiener, V., Mendez-Martin, F., Schmatz, J. & Sachsenhofer, R.F. (2018) Factors controlling shale microstructure and porosity: A case study on upper Visean Rudov beds from the Ukrainian Dniepr-Donets Basin. *AAPG Bulletin*, 102, 2629-2654. <https://doi.org/10.1306/05111817295>

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Misch, D., Klaver, J., Gross, D., Rustamov, J., Sachsenhofer, R.F., Schmatz, J. & Urai, J.L. (2018) Pore space characteristics of Upper Visean "Rudov Beds": Insights from BIB-SEM and organic geochemical investigations. *Geological Society of London – Special Publications*, 484. <https://doi.org/10.1144/SP484.9>

Misch, D., Wegerer, E., Gross, D., Sachsenhofer, R.F., Rachetti, A. & Gratzner, R. (2018) Mineralogy and facies variations of Devonian and Carboniferous shales in the Ukrainian Dniepr-Donets Basin. *Austrian Journal of Earth Sciences*, 111, 15-25. <https://doi.org/10.17738/ajes.2018.0002>

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Misch, D., Leu, W., Sachsenhofer, R.F., Gratzner, R., Rupprecht, B. & Bechtel, A. (2017) Shallow hydrocarbon indications along the Alpine thrust belt and adjacent foreland basin: Distribution and implications for petroleum exploration. *Journal of Petroleum Geology*, 40, 341-362. <https://doi.org/10.1111/jpg.12684>