

List of Publications

2025

Konzett J, Pausch T, **Joachim-Mrosko B.** (accepted) The high P-T stability of fluor-rich apatite in peridotitic and harzburgitic rocks - implications for transport, storage and recycling of phosphorus, volatiles and incompatible trace elements in the slab-mantle wedge system. *Journal of Petrology*, <https://doi.org/10.1093/petrology/egaf034>

2024

Hauzenberger CA, Konzett J, **Joachim-Mrosko B**, Nguyen H (2024) Pliocene to pleistocene REE-P metasomatism in the subcontinental lithosphere beneath southeast Asia-evidence from monazite- and REE-rich apatite-bearing peridotite xenolith from central Vietnam. *Journal of Petrology* 65, egae015. <https://doi.org/10.1093/petrology/egae015>

Joachim-Mrosko, B, Konzett J, Ludwig T, Griffiths T, Habler G, Libowitzky E, Stalder R. (2024) Al and H incorporation and Al diffusion in natural rutile and its high-pressure polymorph TiO₂(II), Geological Society, London, Special Publications 537, <https://doi.org/10.1144/SP537-2022-187>

Joachim-Mrosko, B (2024) Sehen-Staunen-Anfassen-Experimentieren-Verstehen. Möglichkeiten der Schaffung von öffentlichem Bewusstsein in der jungen Generation. In: Pfaff, G; Greiling, RO; Müller, A (Hrsg.): Kritische Rohstoffe - große Bedeutung und geringes öffentliches Bewusstsein - was ist zu tun? Sitzungsberichte Leibniz-Sozietät der Wissenschaften 163, pp. 95 – 107, Trafo Wissenschaftsverlag, Berlin, Deutschland, ISBN 987-3-86464-269-2

Panzer M, Meindl E, Schaefer B, Wagner S, Glodny B, Mayer G, Pircher A, Schwarz C, Beckmann F, Hejny C, **Joachim-Mrosko B**, Konzett J, Tilg H, Heidegger I, Wolf M, Weiskirchen R, Zoller H (2024) Intravenous iron-induced hypophosphatemia and kidney stone disease, *Bone Reports* 21, 101759. <https://doi.org/10.1016/j.bonr.2024.101759>

Pausch T, **Joachim-Mrosko B**, Withers AC, Ludwig T, Vazhakuttiyakam J, Konzett J (2024) The role of calcium phosphate in the storage and transport of the phosphorous at the upper-to-lower mantle transition: An experimental study to 25 GPa in a model peridotitic bulk. *Geochimica et Cosmochimica Acta* 374, 200-216. <https://doi.org/10.1016/j.gca.2024.04.026>

2023

Benisek A, Dachs E, Carpenter MA, **Joachim-Mrosko B**, Vielreicher NM, Wildner M (2023) Vibrational entropy of disordering in omphacite. *Physics and Chemistry of Minerals* 50:36. <https://doi.org/10.1007/s00269-023-01260-7>

Franke MG, Schmidt B, Stalder R, **Joachim-Mrosko B.** (2023) Metamorphic reaction kinetics at anhydrous to water saturated conditions in the binary MgO-SiO₂ system. *Contributions to Mineralogy and Petrology* 178, 87, <https://doi.org/10.1007/s00410-023-02064-2>

2022

Franke MG, **Joachim-Mrosko B** (2022) The effect of fluorine on reaction rim growth dynamics in the ternary CaO-MgO-SiO₂ system. *American Mineralogist* 107, 1477-1486. <https://doi.org/10.2138/am-2022-8123CCBY>

Joachim-Mrosko B, Kawamoto T, Bureau, H (2022): Experimental and Observational Constraints on Halogen Behavior at Depth. *Elements* 18, 35 - 40.
<https://doi.org/10.2138/gselements.18.1.35>

2021

Vitzthum D, Widmann I, Wimmer DS, Wurst K, **Joachim-Mrosko B**, Huppertz H (2021): Crystal Structure of $c\text{-M}_5\text{B}_{12}\text{O}_{25}(\text{OH})$ (M=Al, Al/Ga, Ga/In) – Three Disordered Cubic Trielborates Synthesized under High-Pressure Conditions. *European Journal of Inorganic Chemistry* 12, 1165 - 1174. <https://doi.org/10.1002/ejic.202001136>

2020

Clay P, Joy K, O'Driscoll B, Busemann H, Ruziè-Hamilton L, Burgess R, Fellowes J, **Joachim-Mrosko B**, Pernet-Fisher J, Strekopytov S, Ballentine C (2020) Heavy halogen geochemistry of martian shergottite meteorites and implications for the halogen composition of the depleted shergottite mantle source. *American Mineralogist* 105, 289-306. <https://doi.org/10.2138/am-2020-7237>

Fuchs B, Heymann G, Wang X, Tudi A, Bayarjargal L, Siegel R, Schmutzler A, Senker J, **Joachim-Mrosko B**, Saxer A, Yang Z, Pan S, Huppertz H (2020) $\text{La}_3\text{B}_6\text{O}_{13}(\text{OH})$: The first accentric high-pressure borate displaying edge-sharing BO_4 tetrahedra. *Chemistry A European Journal* 26, 6851-6861. <https://doi.org/10.1002/chem.201905419>

Vitzthum D, Widmann I, Plank M, **Joachim-Mrosko B**, Huppertz H (2020) High-pressure synthesis and crystal structure of $\text{HP-Al}_2\text{B}_3\text{O}_7(\text{OH})$. *Zeitschrift für Naturforschung. Section B: A Journal of Chemical Sciences* 75, 975 - 981. <https://doi.org/10.1515/znb-2020-0151>

2019

Joachim B, Heinrich W, Höschen C, Abart R (2019) The effect of H_2O fluid on relative component mobilities in a biminerale reaction rim in the system CaO-MgO-SiO_2 . *European Journal of Mineralogy* 31, 61-72. <https://doi.org/10.1127/ejm/2019/0031-2796>

Konzett J, Hauzenberger C, Krenn K, **Joachim-Mrosko B**, Stalder R, Gröbner K, Sieberer A-K, Hoang N, Khoi NN (2019) Neogene metasomatism in the subcontinental lithosphere beneath Southeast Asia – evidence from modal and cryptic phosphorus enrichment in peridotites and pyroxenites from southern Laos. *Journal of Petrology*, 60, 2413-2448.
<https://doi.org/10.1093/petrology/egaa013>

2017

Bruns J, Podewitz M, Schauerperl M, **Joachim B**, Liedl KR, Huppertz H (2017) $\text{CaB}_2\text{S}_4\text{O}_{16}$: A Borosulfate exhibiting a New Structure Type with Phyllosilicate Analogue Topology. *Chemistry A European Journal* 27, 16773-16781. <https://doi.org/10.1002/chem.201704228>

Clay PL, Burgess R, Busemann H, Ruziè-Hamilton L, **Joachim B**, Day JMD, Ballentine CJ (2017) Halogens in chondritic meteorites and terrestrial accretion. *Nature* 551, 614-618
<https://doi.org/10.1038/nature24625>

Joachim B, Stechern A, Ludwig T, Konzett J, Pawley A, Ruziè-Hamilton L, Clay PL, Burgess R, Ballentine CJ (2017) Effect of water on the fluorine and chlorine partitioning behavior between olivine and silicate melt. *Contributions to Mineralogy and Petrology* 172:15. <https://doi.org/10.1007/s00410-017-1329-1>

- Ortner TS, Schildhammer D, Tribus M, **Joachim B**, Huppertz H (2017) Synthesis and characterization of the alkali borate-nitrates $\text{Na}_{3-x}\text{K}_x[\text{B}_6\text{O}_{10}]\text{NO}_3$ ($x=0.5, 0.6, 0.7$). *Zeitschrift für Naturforschung* 72b, 215-223. <https://doi.org/10.1515/znb-2016-0242>
- Schmitt MK, Janka O, Pöttgen R, Benndorf C, de Oliveira Jr. M, Eckert H, Pielhofer F, Tragl AS, Wehrich R, **Joachim B**, Johrendt D, Huppertz H (2017) $\text{Mo}_2\text{B}_4\text{O}_9$ – Connecting borate and metal-cluster chemistry. *Angewandte Chemie International Edition* 56, 6449-6453. <https://doi.org/10.1002/anie.201701891>

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- Ortner TS, Wurst K, Seibald M, **Joachim B**, Huppertz H (2016) Synthesis, single-crystal structure determination, and vibrational spectroscopy of the europium borate $\text{Eu}[\text{B}_6\text{O}_8(\text{OH})_5]\cdot\text{H}_3\text{BO}_3$. *European Journal of Inorganic Chemistry* 20, 3292-3298. <https://doi.org/doi:10.1002/ejic.201600222>
- Ortner TS, Wurst K, **Joachim B**, Huppertz H (2016) Syntheses, structure elucidation, and characterization of the borate-nitrates $\text{RE}[\text{B}_5\text{O}_8(\text{OH})(\text{H}_2\text{O})_x]\text{NO}_3\cdot 2\text{H}_2\text{O}$ [RE = Nd ($x = 0.85$), Sm ($x = 0$)]. *European Journal of Inorganic Chemistry* 22, 3659-3665. <https://doi.org/10.1002/ejic.201600480>
- Ruzié-Hamilton L, Clay PL, Burgess R, **Joachim B**, Ballentine CJ, Turner G (2016) Determination of halogen abundances in terrestrial and extraterrestrial samples by the analysis of noble gases produced by neutron irradiation. *Chemical Geology* 437, 77-87. <https://doi.org/10.1016/j.chemgeo.2016.05.003>

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- Joachim B**, Pawley A, Lyon I, Marquardt K, Henkel T, Clay P, Ruzié L, Burgess R, Ballentine CJ (2015) Experimental partitioning of F and Cl between olivine, orthopyroxene and silicate melt at Earth's mantle conditions. *Chemical Geology* 416, 65-78. <https://doi.org/10.1016/j.chemgeo.2015.08.012>

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- Joachim B**, Wohlers A, Norberg N, Gardés E, Petrishcheva E, Abart R (2013) Diffusion and solubility of hydrogen and water in periclase. *Physics and Chemistry of Minerals* 40, 19-27. <https://doi.org/10.1007/s00269-012-0542-8>

2012

- Abart R, Petrishcheva E, **Joachim B** (2012) Thermodynamic model for growth of cellular reaction rims, *American Mineralogist* 97, 231-240. <https://doi.org/10.2138/am.2011.3820>
- Joachim B**, Gardés E, Velickov B, Abart R, Heinrich W (2012) Experimental growth of diopside + merwinite reaction rims: the effect of water on microstructure development. *American Mineralogist* 97, 220-230. <https://doi.org/10.2138/am.2011.3819>

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- Joachim B**, Gardés E, Abart R, Heinrich W (2011) Experimental growth of åkermanite reaction rims between wollastonite and monticellite: evidence for volume diffusion control. *Contributions to Mineralogy and Petrology* 161, 389-399. <https://doi.org/10.1007/s00410-010-0538-7>

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Whittington AG, Hellwig BM, Behrens H, **Joachim B**, Stechern A, Vetere F (2009) The viscosity of hydrous dacitic liquids: implications for the rheology of evolving silicic magmas. *Bulletin of Volcanology* **71**, 185-199. <https://doi.org/10.1007/s00445-008-0217-y>