

**Li Zhang's publication list** (in descending chronological order)

[24] Yuan, H., **Zhang, L.**, Ohtani, E., Meng, Y., Greenberg, E., Prakapenka, V. B. (2019) Stability of Fe-bearing hydrous phases and element partitioning in the system MgO–Al<sub>2</sub>O<sub>3</sub>–Fe<sub>2</sub>O<sub>3</sub>–SiO<sub>2</sub>–H<sub>2</sub>O in Earth's lowermost mantle. *Earth and Planetary Science Letters*

Doi: <https://doi.org/10.1016/j.epsl.2019.115714>

[23] **Zhang, L.**, Yuan, H., Meng, Y., Mao, H.-k. (2019) Development of high-pressure multigrain X-ray diffraction for exploring Earth's interior. *Engineering* 5, 441–447

Doi: <https://doi.org/10.1016/j.eng.2019.02.004>

[22] **Zhang, L.**, Yuan, H., Meng, Y., Mao, H.-k. (2018) Discovery of a hexagonal ultradense hydrous phase in (Fe,Al)OOH. *Proceedings of the National Academy of Sciences of the United States of America* 115 (12), 2908-2911.

Doi: 10.1073/pnas.1720510115

[21]刘曦,代立东,邓力维,范大伟,刘琼,倪怀玮,孙樯,巫翔,杨晓志,翟双猛,张宝华,张莉,李和平 (2017) 近十年我国在地球内部物质高压物性实验研究方面的主要进展. *高压物理学报*, 31(6), 657-681.

DOI: 10.11858/gywlxb.2017.06.001

[20] Mao, H.-k., Hu, Q., Yang, L., Liu, J., Kim, D., Meng, Y., **Zhang, L.**, Prakapenka, V. B., Yang, W., Mao, W. L. (2017) When water meets iron at Earth's core-mantle boundary. *National Science Review*, nwx109.

Doi: 10.1093/nsr/nwx109

[19] Merlini, M., Cerantola, V., Gatta, G. D., Gemmmmi, M., Hanfland, M., Kuppenko, I., Lotti, P., Müllller, H. and **Zhang, L.** (2017) Dolomite-IV: Candidate structure for a carbonate in the Earth's lower mantle. *American Mineralogist*, 102(8), 1763-1766.

Doi:10.2138/am-2017-6161

[18] Yuan, H., **Zhang, L.** (2017) In situ determination of crystal structure and chemistry of minerals at Earth's deep lower mantle conditions. *Matter and Radiation at Extremes*, 1-12.

Doi: 10.1016/j.mre.2017.01.002

[17] Hu, Q., Kim, D. Y., Yang, W., Yang, L., Meng, Y., **Zhang, L.**, and Mao, H.-k. (2016) FeO<sub>2</sub> and FeOOH under deep lower mantle conditions and the Earth's oxygen-hydrogen cycles. *Nature*, 534, 241-244.

Doi: 10.1038/nature18018

[16] **Zhang, L.**, Meng, Y., and Mao, H.-k. (2016) Unit cell determination of coexisting post-perovskite and H-phase in (Mg,Fe)SiO<sub>3</sub> using multigrain XRD: compositional variation across a laser heating spot at 119 GPa. *Progress in Earth and Planetary Science*, 3:13.

Doi: 10.1186/s40645-016-0091-8

[15] **Zhang, L.**, Popov, D., Meng, Y., Wang, J., Ji, C., Li, B., and Mao, H.-k. (2016) In-situ crystal structure determination of seifertite SiO<sub>2</sub> at 129 GPa: Studying a minor phase near Earth's core–mantle boundary. *American Mineralogist*, 101, 231-234.

Doi: 10.2138/am-2016-5525

[14] **Zhang, L.**, Meng, Y., Yang, W., Wang, L., Mao, W.L., Zeng, Q.S., Jeong, J.S., Wagner, A.J., Mkhoyan, K.A., Liu, W., Xu, R., and Mao, H.K. (2014) Disproportionation of (Mg,Fe)SiO<sub>3</sub> perovskite in Earth's deep lower mantle. *Science*, 344(6186), 877-882.

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[13] Shi, C.Y., **Zhang, L.**, Yang, W., Liu, Y., Wang, J., Meng, Y., Andrews, J.C., and Mao, W.L. (2013) Formation of an interconnected network of iron melt at Earth's lower mantle conditions. *Nature Geoscience*, 6(11), 971-975.

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[12] **Zhang, L.**, Meng, Y., Dera, P., Yang, W., Mao, W.L., and Mao, H.-k. (2013) Single-crystal structure determination of (Mg,Fe)SiO<sub>3</sub> postperovskite. *Proceedings of the National Academy of Sciences of the United States of America*, 110(16), 6292-6295.

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[11] **Zhang, L.**, Meng, Y., and Mao, W.L. (2012) Effect of pressure and composition on lattice parameters and unit-cell volume of (Fe,Mg)SiO<sub>3</sub> post-perovskite. *Earth and Planetary Science Letters*, 317-318, 120-125.

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[9] Lin, Y., **Zhang, L.**, Mao, H.-k., Chow, P., Xiao, Y., Baldini, M., Shu, J., and Mao, W.L. (2011) Amorphous Diamond: A High-Pressure Superhard Carbon Allotrope. *Physical Review Letters*, 107(17), 175504.

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Doi: 10.1029/2008gl036759
- [6] **Zhang, L.**, and Fei, Y. (2008) Effect of Ni on Fe–FeS phase relations at high pressure and high temperature. *Earth and Planetary Science Letters*, 268(1-2), 212-218.  
Doi: 10.1016/j.epsl.2008.01.028
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- [4] **Zhang, L.**, Gong, Z., and Fei, Y. (2008) Shock-induced phase transitions in the MgO–FeO system to 200 GPa. *Journal of Physics and Chemistry of Solids*, 69(9), 2344-2348.  
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- [2] **Zhang, L.**, and Gong, Z.-z. (2006) Shock Compression and Phase Transitions of Magnesiowüstite (Mg,Fe)O up to Earth's Lowermost Mantle Conditions. *Chinese Physics Letters*, 23(11), 3049-3051.  
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