



Hong Yang

Ph.D. Student in Geological Sciences, admitted Autumn 2018

Bio

BIO

Hong Yang is currently a PhD student in Geological Science working with Wendy L. Mao. He joined Mao's lab at Stanford University in 2018, after finishing his Master's Degree at HPSTAR, Shanghai, where he was supervised by Jung-Fu Lin. His Master's thesis focused on the experimental determination of iron isotopic fractionation behavior of lower mantle phases using the Synchrotron X-ray technique NRIXS. Before that, he was an undergraduate majoring in Geochemistry at the University of Science and Technology of China. There he performed the quality assessment of bottled drinking water and water from Lake Chao under Fang Huang's supervision.

Hong's research interests include the chemical (especially isotopic) evolution of the Earth and other planetary bodies; structure and sound velocities of iron-alloys at high pressure; pressure-induced electronic, magnetic, elastic and structural transitions in materials; as well as high pressure photon science. His recent research was published on *Earth Planet. Sci. Lett.* 506, 113-122 (2019), entitled "Iron isotopic fractionation in mineral phases from Earth's lower mantle: Did terrestrial magma ocean crystallization fractionate iron isotopes?".

EDUCATION AND CERTIFICATIONS

- Master of Science, Center for High Pressure Science and Technology Advanced Research (HPSTAR) , Condensed Matter Physics (2018)
- Bachelor of Natural Science, University of Science and Technology of China , Geochemistry (2015)

PERSONAL INTERESTS

Hong loves outdoor activities off the beaten path. He was the president of Students' Nature Preservation Association at USTC in 2014 and organized activities including lake water sampling and bird watching. He enjoys travel to national parks, geological parks and nature preserves. He is also a fan of Chinese history with special interest in the study of the "Silk Road", Dunhuang Caves and the Hsi Hsia empire. His favorite musicians are Yanni, Mayday, Jay Chou, Leehom Wang, Fish Leong and Hebe Tien.

LINKS

- My pen spinning video: <https://www.youtube.com/watch?v=OQdPq8jIsIg>

Publications

PUBLICATIONS

- **Phase transition kinetics revealed by in situ x-ray diffraction in laser-heated dynamic diamond anvil cells** *PHYSICAL REVIEW RESEARCH*
Ricks, M., Gleason, A. E., Miozzi, F., Yang, H., Chariton, S., Prakapenka, V. B., Sinogeikin, S., Sandberg, R. L., Mao, W. L., Pandolfi, S.
2024; 6 (1)

- **Composition of Earth's initial atmosphere and fate of accreted volatiles set by core formation and magma ocean redox evolution** *EARTH AND PLANETARY SCIENCE LETTERS*
Gu, J. T., Peng, B., Ji, X., Zhang, J., Yang, H., Hoyos, S., Hirschmann, M. M., Kite, E. S., Fischer, R. A.
2024; 629
- **Preliminary Characterization of Submarine Basalt Magnetic Mineralogy Using Amplitude-Dependence of Magnetic Susceptibility** *GEOCHEMISTRY GEOPHYSICS GEOSYSTEMS*
Yang, H., Tikoo, S. M., Carvalho, C., Bilardello, D., Solheid, P., Gaastra, K. M., Sager, W. W., Thoram, S., Hoernle, K., Hoefig, T. W., Avery, A., Del Gaudio, A. V., Huang, et al
2024; 25 (2)
- **Quasi-One-Dimensional Metallicity in Compressed CsSnI₃**. *Journal of the American Chemical Society*
Ke, F., Yan, J., Matheu, R., Niu, S., Wolf, N. R., Yang, H., Yin, K., Wen, J., Lee, Y. S., Karunadasa, H. I., Mao, W. L., Lin, Y.
2022
- **Cesium-mediated electron redistribution and electron-electron interaction in high-pressure metallic CsPbI₃**. *Nature communications*
Ke, F., Yan, J., Niu, S., Wen, J., Yin, K., Yang, H., Wolf, N. R., Tzeng, Y., Karunadasa, H. I., Lee, Y. S., Mao, W. L., Lin, Y.
2022; 13 (1): 7067
- **High Pressure Brillouin Spectroscopy and X-ray Diffraction of Cerium Dioxide** *MATERIALS*
Frost, M., Lazarz, J. D., Levitan, A. L., Prakapenka, V. B., Sun, P., Tkachev, S. N., Yang, H., Glenzer, S. H., Gleason, A. E.
2021; 14 (13)
- **Noble gas incorporation into silicate glasses: implications for planetary volatile storage** *GEOCHEMICAL PERSPECTIVES LETTERS*
Yang, H., Gleason, A. E., Tkachev, S. N., Chen, B., Jeanloz, R., Mao, W. L.
2021; 17: 1-5
- **Iron force constants of bridgmanite at high pressure: Implications for iron isotope fractionation in the deep mantle** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Wang, W., Liu, J., Yang, H., Dorfman, S. M., Lv, M., Li, J., Zhu, F., Zhao, J., Hu, M. Y., Bi, W., Alp, E. E., Xiao, Y., Wu, et al
2021; 294: 215–31
- **Iron isotopic fractionation in mineral phases from Earth's lower mantle: Did terrestrial magma ocean crystallization fractionate iron isotopes? (vol 506, 113, 2019)** *EARTH AND PLANETARY SCIENCE LETTERS*
Yang, H., Lin, J., Hu, M. Y., Roskosz, M., Bi, W., Zhao, J., Alp, E. E., Liu, J., Liu, J., Wentzcovitch, R. M., Okuchi, T., Dauphas, N.
2019; 524
- **Carbon isotopic signatures of super-deep diamonds mediated by iron redox chemistry** *Geochemical Perspectives Letters*
Liu, J., Wang, W., Yang, H., Wu, Z., Hu, M. Y., Zhao, J., Bi, W., Alp, E. E., Dauphas, N., Liang, W., Chen, B., Lin, J.
2019; 10: 51-55
- **Iron isotopic fractionation between silicate mantle and metallic core at high pressure** *NATURE COMMUNICATIONS*
Liu, J., Dauphas, N., Roskosz, M., Hu, M. Y., Yang, H., Bi, W., Zhao, J., Alp, E. E., Hu, J. Y., Lin, J.
2017; 8