

# 87 Prof. Bin Chen



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## Education

2004-2009: Ph.D. in Geology, University of Illinois at Urbana-Champaign (UIUC), Urbana, Illinois, USA

2001-2004: M.S. in Isotope Geochemistry, University of Science and Technology of China (USTC), Hefei, Anhui, China

1997-2001: B.S. in Geochemistry, University of Science and Technology of China (USTC), Hefei, Anhui, China

## Work Experience

Jan. 2014-present: Assistant Researcher, Hawaii Institute of Geophysics and Planetology, University of Hawaii at Manoa, Honolulu, Hawaii

Mar. 2013-Dec. 2013: Research Assistant Professor, Department of Geology, University of Illinois, Urbana, Illinois | Chief Technology Officer, COMPRES Technology Center, Advanced Photon Source, Argonne National Laboratory, Argonne, Illinois

Dec. 2011-Feb. 2013: Assistant Research Scientist, Department of Earth and Environmental Sciences, University of Michigan, Ann Arbor, Michigan

May 2011-Nov. 2011: Research Fellow, Department of Earth and Environmental Sciences, University of Michigan, Ann Arbor, Michigan

Aug. 2009-Apr. 2011: Texaco Postdoctoral Scholar, Division of Geological and Planetary Sciences, California Institute of Technology, Pasadena, California

## Research Interests

High-pressure mineral physics

## Major Publications

Zhao, Z. F., Zheng, Y. F., Chen, B., Wu, Y. B. (2005). A geochemical study of element and sr-nd isotopes for eclogite and gneiss from ccsd core 734 to 933m. *Acta Petrologica Sinica*, 21(2), 325-338.

Chen, R. X., Zheng, Y. F., Gong, B., Zhao, Z. F., Gao, T. S., Chen, B., et al. (2007). Origin of retrograde fluid in ultrahigh-pressure metamorphic rocks: constraints from mineral hydrogen isotope and water content changes in eclogite-gneiss transitions in the sulu orogen. *Geochimica Et Cosmochimica Acta*, 71(9), 2299-2325.

Chen, B., Li, Z., Zhang, D., Liu, J., Hu, M. Y., Zhao, J., et al. (2014). Hidden carbon in earth's inner core revealed by shear softening in dense  $Fe_7C_3$ . *Proceedings of the National Academy of Sciences*, 111(50), 17755-17758.

- Chen, B., Gao, L., Barbara, L., Przemyslaw, D., Alp, E. E., Zhao, J., et al. (2012). Magneto - elastic coupling in compressed  $Fe_7C_3$  supports carbon in earth's inner core. *Geophysical Research Letters*, 39(18).
- Chen, B., Jackson, J. M., Sturhahn, W., Zhang, D., Zhao, J., Wicks, J. K., et al. (2012). Spin crossover equation of state and sound velocities of  $(Mg_{0.65}Fe_{0.35})O$  ferropericlase to 140 gpa. *Journal of Geophysical Research Atmospheres*, 117(B8), 1133-1172.
- Gao, L., Chen, B., Zhao, J., Alp, E. E., Sturhahn, W., Li, J. (2011). Effect of temperature on sound velocities of compressed  $Fe_3C$ , a candidate component of the earth's inner core. *Earth & Planetary Science Letters*, 309(3), 213-220.
- Chen, B., Hsieh, W. P., Cahill, D. G., Trinkle, D. R., Li, J. (2011). Thermal conductivity of compressed  $H_2O$  to 22 gpa: a test of the Leibfried-Schlömann equation. *Physical Review B Condensed Matter*, 83(13).
- Hsieh, W. P., Chen, B., Li, J., Keblinski, P., Cahill, D. G. (2009). Pressure tuning of the thermal conductivity of the layered muscovite crystal. *Physical Review B*, 80(18), 2665-2668.
- Gao, L., Chen, B., Lerche, M., Alp, E. E., Sturhahn, W., Zhao, J., et al. (2009). Sound velocities of compressed  $Fe_3C$  from simultaneous synchrotron x-ray diffraction and nuclear resonant scattering measurements. *Journal of Synchrotron Radiation*, 16(6), 714-722.
- Chen, B. (2009). Nature and dynamics of earth and planetary cores from high-pressure properties of iron -rich alloys. *Dissertations & Theses - Gradworks*, 92(6), 828-834.
- Gao, L., Chen, B., Wang, J., Alp, E. E., Zhao, J., Lerche, M., et al. (2008). Pressure-induced magnetic transition and sound velocities of  $Fe_3C$ : implications for carbon in the earth's inner core. *Geophysical Research Letters*, 35(17), 1770-1775.
- Chen, B., Gao, L., Leinenweber, K., Wang, Y. B., Sanhira, T., Li, J. (2008). Investigation of high-pressure melting behavior in the Fe-S system using synchrotron x-ray radiography. *High Pressure Research*, 28(3), 315-326.
- Chen, B., Jie, L., Hauck, S. A. (2008). Non - ideal liquidus curve in the Fe - S system and mercury's snowing core. *Geophysical Research Letters*, 35(7).
- Chen, B., Gao, L., Funakoshi, K., Li, J. (2007). Thermal expansion of iron-rich alloys and implications for the earth's core. *Proceedings of the National Academy of Sciences of the United States of America*, 104(22), 9162-7.
- Zhao, Z. F., Chen, B., Zheng, Y. F., Chen, R. X., Wu, Y. B. (2007). Mineral oxygen isotope and hydroxyl content changes in ultrahigh-pressure eclogite-gneiss contacts from Chinese continental scientific drilling project cores. *Journal of Metamorphic Geology*, 25(2), 165-186.
- Grappuso, A., Burigana, C., Finelli, F. (2004). A study of oxygen isotopes and hydroxyl content in minerals of uhp metamorphic rocks from CCSD core 734 to 933m. *Acta Petrologica Sinica*, 20(5), 1116-1132.