

XIANGKUN ZHU

Degrees

- 1985. Bachelor of Science**, Changchun University of Earth Sciences. Thesis: The mechanism of Cu-mineralisation in Zhongtiaoshan Cu-deposit, China.
- 1988. Master of Science**, Chinese Academy of Sciences. Thesis: Geochemistry of boron and gold in Dalabut Ophiolites, West Junggar, Xinjiang.
- 1997. Doctor of Philosophy**, Cambridge University. Thesis: High Resolution *In Situ* SIMS Study of Metamorphic Monazite.

Biography

- 1981-1985:** Undergraduate in Changchun University of Earth Sciences (now Changchun University of Science and Technology), China. Majored in Mineralogy and Petrology.
- 1985-1988:** Research student pursuing for M.Sci in the Institute of Geochemistry, Chinese Academy of Sciences, specialised in Geochemistry of Earth's Interior.
- 1988-1992:** Research Fellow, Institute of Geochemistry, Chinese Academy of Sciences. Independent research on several projects ranging from petrology and geology of ophiolites, mantle xenoliths and ore deposits. During this period 4 out of 5 research proposals submitted to the National Science Foundation of China and Chinese Academy of Sciences were rewarded.
- 1992-1993:** Visiting Research Scholar, Department of Earth Sciences, University of Cambridge. Commenced training in Isotope Geochemistry and secondary ion mass spectrometry (SIMS). I also gained considerable skills in scanning electron microscopy and electron probe micro-analysis during this time.
- 1993-1997:** Ph.D. research student in the Department of Earth Sciences, University of Cambridge, specialised in Isotope Geochemistry. Two years of my study was completed on leave in at Department of Earth Sciences, University of Oxford.
- 1997-2002:** Research Fellow, Department of Earth Sciences, University of Oxford. Two research areas have been pursuing. One is on Loess study relating to global climate change, and the other is about the implications of isotopes of transitional metals in geochemistry, cosmochemistry and biochemistry.
- 2002-present:** Professor of Geochemistry, Institute of Geology, Chinese Academy of Geological Sciences; Director, Key Laboratory of Isotope Geology, Ministry of Land and Resources, China.

Research Experience

From 1993 to 1997, I worked on in situ geochronology of metamorphic rocks. This study combined chronological, petrographic and chemical information together and represented a significant progress in geochronology of high-grade metamorphic rocks. The main achievements include: 1) Development of the methodology for in situ SIMS chronometry, 2) Documentation of the armouring effect of host mineral on chronometer. 3) Detailed characterisation of monazite zonation and its geological significance. 4) Investigation of monazite chemical compositional variation and its geological implications. 5) Discovery of the matrix effects in SIMS chronometry.

From 1997 onwards, my researches mainly focus on two kinds of projects: global climate change, and isotopes of transitional metals and their implications in geochemistry, cosmochemistry and biogeochemistry. These projects are still in

progress, but some achievements have already been made, which include: 1) Technical developments of Cu-, Fe-, and Zn-isotope analysis using plasma source mass spectrometry (MC-ICPMS); 2) Investigation of the natural variations of Fe, Cu and Zn isotopes and their potential to be used as tracers in geochemical and biological processes; 3) Recovery of Fe-, Cu- and Zn-isotope composition of North Atlantic deep water over the last 6 Ma and the causes for their variations in seawater; 4) Discovery of a close correlation between Fe- and Pb-isotopes in oceanic Fe-Mn crusts and its significance in resolving processes affecting Fe-isotope fractionation; 5) High-precision measurements of three-iron isotopes in meteorites and their implications for the evolution of early solar system; 6) Recognition of provenance shifts for Chinese loess using Pb-isotopes and their climatic significance.