

53 Dr Xuan-Ce Wang



Name: Xuan-Ce Wang

Organization: Department of Applied Geology, Curtin University

E-mail: X.Wang3@curtin.edu.au

Education

B.A. Petroleum Geology, China University of Geosciences, Wuhan, China, 2004

Ph.D. Petroleum Geology, Guangzhou Institute of Geochemistry, Chinese Academy of Science, China, Guangzhou, China, 2008

Work Experience

2015-present, ARC Future fellow, Curtin University

Oct, 2011-2014, Senior Research Fellow, ARC Centre of Excellence in Core to Crust Fluid Systems and Curtin University;

Oct, 2009-Oct, 2010, Senior Research Fellow, Curtin University jointly funded with UWA;

March, 2008- Oct, 2009, Post-Doctoral Fellow at Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing, China;

Oct, 2004-May, 2008, Research Assistant: Guangzhou Institute of Geochemistry, Chinese Academy of Sciences (supervisor, Professor Xian-Hua Li);

July, 2001-10, 2004, Research Assistant: Earth Science School, China University of Geoscience (Wuhan) (Supervisor, Professor Shan Gao).

Research Interests

Geochemistry and Petrology

1. Origin and evolution of the Earth's crust and mantle
2. Primordial differentiation of bulk silicate Earth
3. Establishing the timing of oil generation from source rocks and forming an oil source-oil correlation tool

Services & Awards

2014 ARC Future fellowship

2014 Awarded for highest research performance index in Curtin University and in Faculty

2008 Awarded President's Scholarship from the Chinese Academy of Sciences

Major Publications

Li, J., X. Wang, J. Xu, Y. Xu, G. Tang, and Q. Wang. 2015. "Disequilibrium-induced initial Os isotopic heterogeneity in gram aliquots of single basaltic rock powders: Implications for dating and source tracing." *Chemical Geology* 406: 10-17.

Wang, X., X. Li, W. Li, and Z. Li. 2007. "Ca. 825 Ma komatiitic basalts in South China: First evidence for >1500 degrees C mantle melts by a Rodinian mantle plume." *Geology* 35 (12): 1103-1106.

- Wang, X., Z. Li, X. Li, Q. Li, G. Tang, Q. Zhang, and Y. Liu. 2011. "Nonglacial origin for low- $\delta^{18}\text{O}$ Neoproterozoic magmas in the South China Block: Evidence from new in-situ oxygen isotope analyses using SIMS." *Geology* 39 (8): 735-738.
- Wang, X., Z. Li, X. Li, J. Li, Y. Liu, W. Long, J. Zhou, and F. Wang. 2012. "Temperature, pressure, and composition of the mantle source region of late cenozoic basalts in Hainan Island, SE Asia: A consequence of a young thermal mantle plume close to subduction zones?." *Journal of Petrology* 53 (1): 177-233.
- Wang, X., S. A. Wilde, Q. Li, and Y. Yang. 2015. "Continental flood basalts derived from the hydrous mantle transition zone." *Nature Communications* 6: 1-9.
- Ji, W., F. Wu, S. Chung, X. Wang, C. Liu, Q. Li, Z. Liu, X. Liu, and J. Wang. 2016. "Eocene Neo-Tethyan slab breakoff constrained by 45 Ma oceanic island basalt-type magmatism in southern Tibet." *Geology* 44 (4): 283-286.
- Dan, W., X. Li, Q. Wang, X. Wang, D. Wyman, and Y. Liu. 2016. "Phanerozoic amalgamation of the Alxa Block and North China Craton: Evidence from Paleozoic granitoids, U-Pb geochronology and Sr-Nd-Pb-Hf-O isotope geochemistry." *Gondwana Research* 32: 105-121.
- Li, C., X. Wang, J. Guo, Z. Chu, and L. Feng. 2016. "Rapid separation scheme of Sr, Nd, Pb, and Hf from a single rock digest using a tandem chromatography column prior to isotope ratio measurements by mass spectrometry." *Journal of Analytical Atomic Spectrometry* 31 (5): 1150-1159.
- Cen, T., W. Li, X. Wang, C. Pang, Z. Li, G. Xing, X. Zhao, and J. Tao. 2016. "Petrogenesis of early Jurassic basalts in southern Jiangxi Province, South China: Implications for the thermal state of the Mesozoic mantle beneath South China." *Lithos* 256-257: 311-330.
- Yang, Y., X. Wang, Q. Li, and X. Li. 2016. "Integrated in situ U-Pb age and Hf-O analyses of zircon from Suixian Group in northern Yangtze: New insights into the Neoproterozoic low- $\delta^{18}\text{O}$ magmas in the South China Block." *Precambrian Research* 273: 151-164.
- Li, C., J. Guo, Z. Chu, L. Feng, and X. Wang. 2015. "Direct High-Precision Measurements of the $^{87}\text{Sr}/^{86}\text{Sr}$ Isotope Ratio in Natural Water without Chemical Separation Using Thermal Ionization Mass Spectrometry Equipped with 10^{12} Ω Resistors." *Analytical Chemistry* 87 (14): 7426-7432.
- Long, X., S. A. Wilde, Q. Wang, C. Yuan, X. Wang, J. Li, Z. Jiang, and W. Dan. 2015. "Partial melting of thickened continental crust in central Tibet: Evidence from geochemistry and geochronology of Eocene adakitic rhyolites in the northern Qiangtang Terrane." *Earth and Planetary Science Letters* 414: 30-44.
- Li, J., P. Zhao, J. Liu, X. Wang, A. Yang, G. Wang, and J. Xu. 2015. "Reassessment of hydrofluoric acid desilicification in the carius tube digestion technique for Re-Os isotopic determination in geological samples." *Geostandards and Geoanalytical Research* 39 (1): 17-30.
- Li, C., X. Wang, Y. Li, Z. Chu, J. Guo, and X. Li. 2015. "Ce-Nd separation by solid-phase micro-extraction and its application to high-precision $^{142}\text{Nd}/^{144}\text{Nd}$ measurements using TIMS in geological materials." *Journal of Analytical Atomic Spectrometry* 30: 895-902.
- Dan, W., Q. Wang, X. Wang, Y. Liu, D. Wyman, and Y. Liu. 2015. "Overlapping Sr-Nd-Hf-O isotopic compositions in Permian mafic enclaves and host granitoids in Alxa Block, NW China: Evidence for crust-mantle interaction and implications for the generation of silicic igneous provinces." *Lithos* 230: 133-145.

- Pang, C., X. Wang, Y. Xu, S. Wen, Y. Kuang, and L. Hong. 2015. "Pyroxenite-derived early cretaceous lavas in the liaodong peninsula: Implication for metasomatism and thinning of the lithospheric mantle beneath North china craton." *Lithos* 227: 77-93.
- Liu, E., X. Wang, J. Zhao, and X. Wang. 2015. "Geochemical and Sr-Nd isotopic variations in a deep-sea sediment core from Eastern Indian Ocean: Constraints on dust provenances, paleoclimate and volcanic eruption history in the last 300,000years." *Marine Geology* 367: 38-49.
- Yang, C., X. Li, X. Wang, and Z. Lan. 2015. "Mid-Neoproterozoic angular unconformity in the Yangtze Block revisited: Insights from detrital zircon U-Pb age and Hf-O isotopes." *Precambrian Research* 266: 165-178.
- Cui, X., X. Jiang, J. Wang, X. Wang, J. Zhuo, Q. Deng, S. Liao, H. Wu, Z. Jiang, and Y. Wei. 2015. "Mid-Neoproterozoic diabase dykes from Xide in the western Yangtze Block, South China: New evidence for continental rifting related to the breakup of Rodinia supercontinent." *Precambrian Research* 268: 339-356.
- Dan, W., X. Li, Q. Wang, X. Wang, and Y. Liu. 2014. "NEOPROTEROZOIC S-TYPE GRANITES IN THE ALXA BLOCK, WESTERNMOST NORTH CHINA AND TECTONIC IMPLICATIONS: IN SITU ZIRCON U-Pb-Hf-O ISOTOPIC AND GEOCHEMICAL CONSTRAINTS." *American Journal of Science* 314: 110-153.
- Li, J., X. Jiang, F. Xu, L. Zhong, X. Wang, G. Q. Wang, and P. Zhao. 2014. "Determination of Platinum-Group Elements and Re-Os Isotopes using ID-ICP-MS and N-TIMS from a Single Digestion after Two-Stage Column Separation." *Geostandards and Geoanalytical Research* 38 (1): 37-50.
- Li, J., X. Liang, L. Zhong, X. Wang, Z. Ren, S. Sun, Z. Zhang, and J. Xu. 2014. "Measurement of the Isotopic Composition of Molybdenum in Geological Samples by MC-ICP-MS using a Novel Chromatographic Extraction Technique." *Geostandards and Geoanalytical Research* 38 (3): 345-354.
- Li, C., J. Guo, Y. Yang, Z. Chu, and X. Wang. 2014. "Single-step separation scheme and high-precision isotopic ratios analysis of Sr–Nd–Hf in silicate materials." *Journal of Analytical Atomic Spectrometry* 29: 1467-1476.
- Li, J., X. Wang, Z. Ren, J. Xu, B. He, and Y. Xu. 2014. "Chemical heterogeneity of the Emeishan mantle plume: Evidence from highly siderophile element abundances in picrites." *Journal of Asian Earth Sciences* 79: 191-205.
- Pisarevsky, S. A., M. T. Wingate, Z. Li, X. Wang, E. Tohver, and C. L. Kirkland. 2014. "Age and paleomagnetism of the 1210 Ma Gnowangerup–Fraser dykeswarm, Western Australia, and implications for late Mesoproterozoic paleogeography." *Precambrian Research* 246: 1-15.
- Wang, X., Z. Li, J. Li, S. A. Pisarevsky, and M. T. Wingate. 2014. "Genesis of the 1.21 Ga Marnda Moorn large igneous province by plume–lithosphere interaction." *Precambrian Research* 241: 85-103.
- Dan, W., Q. Wang, X. Li, X. Wang, Y. Liu, and D. A. Wyman. 2014. "Paleoproterozoic S-type granites in the Helanshan Complex, Khondalite Belt, North China Craton: Implications for rapid sediment recycling during slab break-off." *Precambrian Research* 254: 59-72.
- Li, X., Z. Li, W. Li, X. Wang, and Y. Gao. 2013. "Revisiting the "C-type adakites" of the Lower Yangtze River Belt, central eastern China: In-situ zircon Hf–O isotope and geochemical constraints." *Chemical Geology* 345: 1-15.

- Wang, X., Z. Li, X. Li, J. Li, Y. Xu, and X. Li. 2013. "Identification of an ancient mantle reservoir and young recycled, materials in the source region of a young mantle plume: Implications for potential linkages between plume and plate tectonics." *Earth and Planetary Science Letters* 377-378: 248-259.
- Deng, Q., J. Wang, Z. Wang, X. Wang, Y. Qiu, Q. Yang, Q. Du, X. Cui, and X. Zhou. 2013. "Continental flood basalts of the Huashan Group, northern margin of the Yangtze block – implications for the breakup of Rodinia." *International Geology Review* 55 (15): 1865-1884.
- Pisarevsky, S. A., T. K. Bswal, X. Wang, B. D. Waele, R. Ernest, U. Söderlund, J. A. Tait, K. Ratre, Y. K. Singh, and M. Cleve. 2013. "Palaeomagnetic, geochronological and geochemical study of Mesoproterozoic Lakhna Dykes in the Bastar Craton, India: Implications for the Mesoproterozoic supercontinent." *Lithos* 174: 125-143.
- Wang, X., Z. Li, and X. Li. 2013. "Early differentiation of the bulk silicate Earth as recorded by the oldest mantle reservoir." *Precambrian Research* 238: 52-60.
- Li, X., Z. Li, B. He, W. Li, Q. Li, Y. Gao, and X. Wang. 2012. "The Early Permian active continental margin and crustal growth of the Cathaysia Block: In situ U–Pb, Lu–Hf and O isotope analyses of detrital zircons." *Chemical Geology* 328: 195-207.
- Dan, W., X. Li, J. Guo, Y. Liu, and X. Wang. 2012. "Paleoproterozoic evolution of the eastern Alxa Block, westernmost North China: Evidence from in situ zircon U–Pb dating and Hf–O isotopes." *Gondwana Research* 21: 838-864.
- Meng, L., Z. Li, H. Chen, X. Li, and X. Wang. 2012. "Geochronological and geochemical results from Mesozoic basalts in southern South China Block support the flat-slab subduction model." *Lithos* 132-133: 127-140.
- Yao, W., Z. Li, W. Li, X. Wang, X. Li, and J. Yang. 2012. "Post-kinematic lithospheric delamination of the Wuyi–Yunkai orogen in South China: Evidence from ca. 435 Ma high-Mg basalts." *Lithos* 154: 115-129.
- Wang, H., L. Ruan, J. Guo, X. Wang, Q. Liu, B. Liang, Z. Li, and B. Wang. 2012. "Late Triassic sedimentary geochemistry and tectonic significance in the Yajiang Basin, sichuan." *Northwestern Geology* 45 (2): 88-98.
- Wang, X., X. Li, Z. Li, Q. Li, G. Tang, Y. Gao, Q. Zhang, and Y. Liu. 2012. "Episodic Precambrian crust growth: Evidence from U–Pb ages and Hf–O isotopes of zircon in the Nanhua Basin, central South China." *Precambrian Research* 222-223: 386-403.
- Dan, W., X. Li, J. Guo, Y. Liu, and X. Wang. 2012. "Integrated in situ zircon U–Pb age and Hf–O isotopes for the Helanshan khondalites in North China Craton: Juvenile crustal materials deposited in active or passive continental margin?." *Precambrian Research* 222-223: 143-158.