

WEIRAN LI

Earth Observatory of Singapore, Nanyang Technological University
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EDUCATION

- 08/2014-present** **Ph.D. student**, Earth Observatory of Singapore, **Nanyang Technological University (Singapore)**
07/2014 **M.Sc.** (Geochronology), School of Earth and Space Sciences, **Peking University (China)**
Thesis: $^{40}\text{Ar}/^{39}\text{Ar}$ isochron dating on Quaternary volcanic rocks from Changbaishan Volcano, China
07/2012 **B.Sc.** (Geochemistry), School of Earth and Space Sciences, **Peking University (China)**

AWARDS AND GRANTS

- July 2018** ‘**Best student presentation award**’ by the 16th International Symposium on Experimental Mineralogy, Petrology and Geochemistry (EMPG) at Clermont-Ferrand (France).
2017-2018 **Dr. Stephen Riady Geoscience Scholarship** (20,000 SGD)
2014-2019 **Ph.D. Research Scholarship**, Nanyang Technological University, Singapore.
2012-2013 **Guang-Hua Scholarship**, Peking University, China

RESEARCH EXPERIENCES

08/2014-present. Ph.D. student at **Earth Observatory of Singapore, Nanyang Technological University**
Supervisor: Associate Professor Fidel Costa

- Using mineralogy and thermodynamic calculations to constrain volatile budgets of pre-eruptive magmas with case study of Merapi Volcano (Indonesia).
- Using diffusion theory to constrain time scales of magmatic processes based on self-developed codes for various types of diffusion modelling.

06/2017-08/2017. Visiting student at **Ruhr University at Bochum, Germany** (collaborating with Sumit Chakraborty)
• Diffusion experiments on multicomponent diffusion of F, Cl, and OH in apatite.

08/2012-07/2014. Master student at **School of Geology and Space Sciences, Peking University**

- Developed an approach of dating young volcanic rocks (10-100 ka) using $^{40}\text{Ar}/^{39}\text{Ar}$ isochron method and applied to pumice from Changbaishan Volcano, China.

08/2011-07/2012. Research assistant at **School of Geology and Space Sciences, Peking University**

- Daily management and operations on Mass Spectrometer GV5400 in K-Ar and $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology lab.

SKILLS AND SPECIALIZED TRAININGS

- Experienced in using electron microscope (EPMA), secondary ion mass spectrometry (Cameca ims 1280), and Fourier-transform infrared spectroscopy (FTIR) to measure volatile compositions in hydrous minerals.
- Experienced in diffusion modelling using finite difference method through MATLAB-based codes.

07/2016. “Computational thermodynamics and petrology with the MELTS family of models” workshop in Yokohama, Japan.

09/2016. EMU school on “Mineral reaction kinetics: microstructures, textures, chemical and isotopic signatures” at University of Vienna, Austria.

08/2017. Magma Chamber Simulator (MCS) Workshop in Portland, USA.

PUBLICATIONS

Published:

Li W.R., Ji J.Q., Sang H.Q., Zhou J., Tu J.Y., Sa X., Ye H. (2013), Laser $^{40}\text{Ar}/^{39}\text{Ar}$ isochron dating on Leizhou Quaternary volcanic rocks (in Chinese). *Acta Petrologica Sinica* **29**, 2775-2788.

In preparation:

Li, W., Costa, F., Nagashima, K. (2018), A thermodynamic model of using apatite to constrain per-eruptive magmatic volatile budgets (H_2O , CO_2 , F, Cl, S).

Li, W., Costa, F., Chakraborty, S., Nagashima, K. (2018). Multicomponent diffusion of F, Cl, OH in apatite and its applications for magma ascent rate determinations.

CONFERENCES

06/2018. 16th International Symposium on Experimental Mineralogy, Petrology and Geochemistry (EMPG), Clermont-Ferrand (France). **Oral presentation:** “A new experimental study on multicomponent diffusion of F, Cl and OH in apatite and implications for magma ascent rate determinations”, **Li, W.**, Costa, F., Chakraborty, S., Nagashima, K.

08/2017. IAVCEI Scientific Assembly, Portland (USA). **Oral presentation:** “Contrasting eruption styles of Merapi volcano but similar magma pre-eruptive volatile compositions (CO_2 , H_2O , S, Cl, F) and contents”. **Li, W.**, Costa, F., Herrin, J., Nagashima, K.

08/2017. AOGS General Assembly, Singapore (Singapore). **Oral presentation:** “Apatite as a Potential Indicator of Magmatic Carbon Dioxide and Water Concentrations”. **Li, W.**, Costa, F., Herrin, J.

07/2016. Goldschmidt Conference, Yokohama (Japan). “Same initial volatile budget but different ascent paths led to contrasting eruptive styles at Merapi Volcano in 2006 and 2010”. **Li, W.**, Costa, F., Herrin, J.

07/2013. Goldschmidt Conference, Florence (Italy). “ $^{40}\text{Ar}/^{39}\text{Ar}$ phenocryst-matrix isochron dating on Quaternary volcanic rocks”. **Li, W.**, Ji, J., Zhou, J.

PARTICIPATION IN SCIENTIFIC EVENTS

11/2017. Principle lecturer of “Studying petrography and mineralogy of volcanic rocks using SEM” workshop at BPPTKG, Yogyakarta (Indonesia).

TEACHING EXPERIENCE

Nanyang Technological University

Teaching assistant certificate, Advanced level

Teaching assistant in *Earth Materials* (2015/2016 spring, 2016/2017 spring)

Teaching assistant in *Natural Hazards* (2015/2016 fall, 2016/2017 fall, 2017/2018 fall)

LANGUAGES

Mandarin as mother tongue. Fluent in English. Basic German and Japanese.