

Joint winner of the 2022 IAG Young Scientist Award

Lei Xu



Lei's first contact with mass spectrometry was during her master's degree at China University of Geosciences, Wuhan. She then moved to the Institute of Geology and Geophysics Chinese Academy of Sciences, Beijing, for her PhD where she focused on the development of new strategies and methods for isotopic analyses with three main strands to her work. She set up a new protocol for Sm-Nd isotopic measurements with high spatial resolution by LA-MC-ICP-MS. This method was used to reveal the petrogenesis of the Chang'E-5 basalts, the results of which were published in *Nature*. She also developed a low sample-consumption leaching method for Rb-Sr isochron dating of pyrite by TIMS; this method was used to constrain the mineralization age of Pb-Zn-Au deposits in the North China Craton.

Recently, she reported a new synthetic Cr standard for mass bias and isobaric interference corrections during *in situ* Fe isotopic analyses of Cr-rich geological samples. This methodology is likely to be of benefit to many laboratories engaged in Fe isotope analysis by LA-MC-ICP-MS. In her spare time Lei Xu enjoys field trips and relaxing with her two puppies.

1. Xu L. et al. (2015). *In situ Nd isotope analyses in geological materials with signal enhancement and non-linear mass dependent fractionation reduction using laser ablation MC-ICP-MS. Journal of Analytical Atomic Spectrometry*, **30**, 232-244.
2. Xu L. et al. (2018). *Determination of Sm-Nd isotopic compositions in fifteen geological materials using laser ablation MC-ICP-MS and application to monazite geochronology of metasedimentary rock in the North China Craton. Geostandards and Geoanalytical Research*, **42**, 379-394, doi:10.1111/ggr.12210.
3. Xu L. et al. (2020). *Pyrite Rb-Sr, Sm-Nd and Fe isotopic constraints on the age and genesis of the Qingchengzi Pb-Zn deposits, northeastern China. Ore Geology Reviews*, **117**: 103324.
4. Xu L. et al. (2021). *In situ Fe isotopic analyses of fourteen reference materials using a synthetic Cr standard for mass bias and isobaric interference corrections by femtosecond LA-MC-ICP-MS. Journal of Analytical Atomic Spectrometry*, **36**, 747-757.