# Oxygen Isotope Homogeneity Assessment for Apatite U-Th-Pb Geochronology Reference Materials

QING YANG [1], XIAO-PING XIA [1]*, LE ZHANG [1], WANFENG ZHANG [1]

[1] Guangzhou Institute of Geochemistry, Chinese Acedemy of Science，China

Secondary Ion Mass Spectrometry (SIMS) measurement of oxygen isotopes for apatite has been employed by increasingly more petrogenetic, metallogenic and climate change studies. Well-characterised reference materials are needed due to the matrix effect, but they are yet to be well established. In this study, we conducted in-situ oxygen isotopic and chemical analyses on six commonly-used apatite reference materials (i.e., Emerald, Kvodor, McClure, Mud Tank, Otter Lake and Slyudyanka) and two in-house apatite references (Qinghu and GEMS 203) to assess their oxygen isotope homogeneity and applicability for micro-beam analyses. Our results show that all these apatite references are in general chemically homogeneous. In terms of oxygen isotopes, GEMS 203, Kvodor and McClure are fairly homogeneous, whereas Emerald, Mud Tank, Otter Lake, Qinghu and Slyudyanka are less homogenous. This indicates that the former group represents better reference materials for in-situ oxygen isotopic analyses, whilst the latter group can be used as secondary reference material for analytical quality control.