# Geochemistry and Geochronology of igneous rocks in the Erdenet Cu-Mo porphyry deposit area, North Mongolia

OCHIR GEREL[1], BAATAR MUNKHTSENGEL[1], BAYARAA BATKHISHIG[1], BATSAIKHAN UNDARMAA[1,2], GANBAT ARIUNTSETSEG[1] ANAAD CHIMEDTSEREN[1]

[1]Mongolian University of Science and Technology, Ulaanbaatar, Mongolia
[2] Graduate School of Environmental Studies, Tohoku University, Japan

The Erdenet Cu-Mo porphyry deposit located in the central part of the Orkhon-Selenge trough of the CAOB is hosted by med-high calc-alkaline sequence of volcanic (Khanui Group) and intrusive (Selenge Complex) rocks [1]. New geochemical data support close origin of the upper Khanui andesite-dacite volcanics of late Permian and late Permian-early Triassic Selenge Complex (243-249 Ma). Granitic rock previously mapped as Neoproterozoic in the area is newly dated as Permian (255±4Ma) and it shows similar geochemical characteristics to the Selenge Complex. Both granitoids are metaluminous, I-type, enriched in LILE and depleted in Nb, Ti, P, LREE and show flat HREE with small negative Eu anomaly representing arc environment. Mineralized granodiorite-granite porphyries (e.g. Erdenet Association, 240 Ma age [2]) and subvolcanic dikes subsequently intruded into Selenge Complex are geochemically evolved and have higher degree of LILE and LREE enrichment, depletion in mid-HREE, and higher Sr/Y and La/Yb values, which show adakitic signature [3]. Major and trace element geochemistry of Late Triassic-early Jurassic Mogod Formation shows postsubduction/rift environment. It is differently interpreted as post-mineralization or related to mineralized porphyries [1].

New geochemical and geochronological data of late Permian to early Jurassic igneous rocks in the Erdenet deposit area raises further thinking of geodynamic settings of subduction, postsubduction/rifting suggested by different researchers.

[1] Gerel et al., 2005. IAGOD Guidebook series **11**, 85-103. [2] Munkhtsengel, 2007. PhD thesis. [3] Gerel et al., 2013. The 8th IFOST. MUST, **V1,** 537-542.