GEOCHORONOLOGY AND PETROCHEMISTREY OF LATE PALEOZOIC MAGMATIC ROCKS OF THE MANDAKH AREA, SOUTHEAST MONGOLIA

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The southeast Mongolia has become a major survey area for unraveling the Paleozoic tectonic evolution because Mongolia occupies the central part of the CAOB which is enormous and composed of a multiplicity of terranes including ancient island and continental arcs, ophiolites, passive continental margins, Precambrian continental blocks and high-T/low-P metamorphic zones and where porphyry Cu deposits occur. The late Paleozoic magmatic rocks are widely distributed in the Mandakh area which is located in the Curvansaikhan and Manlai terrains, in the southeast Mongolia. We will discuss petrochemical features, mineral assemblage and new geochronological constrain of magmatic rocks in the Mandakh area. Furthermore, we compared petrochemical characteristics of the Mandakh area with Tampakan deposit (Philippines), Cerro Colorado deposit (Chili) and negative criteria of Cu deposits (Japan) in order to characterize potential of the porphyry copper deposit in Mandakh area.

The Mandakh area’ s igneous rocks the geochemical features are calc-alkaline, magnetite-series, I type and similar to adakite type. The Devonian intrusive rocks comprised of syenite and syenogranite, while the Carboniferous intrusive rocks consist of granodiorite, monzodiorite, quartz-monzonite and hornblende granite. Devonian magmatic rocks are more alkali in composition. Although Devonian and Carboniferous igneous rocks in the Mandakh area are a little different each other, these igneous rocks are possibility copper deposits as suggested by petrochemical comparisions with bonanza copper deposits in the world.

Keywords: Petrochemistry, Geochoronology, Southeastern Mongolia, Porphyry Copper deposits

