[EJ] Evening Poster | S (Solid Earth Sciences) | S-RD Resources, Mineral Deposit & Resource Exploration

[S-RD33]Resource Geology

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Ore deposits consisting of supracrustal concentrated valuable elements and minerals result from the Earth's dynamics including magmatism, hydrothermal activity, metamorphism, and weathering. The formation of ore deposits is also closely associated with global environmental changes and biological evolution in the Earth's history. Involvement of different academic fields in Earth Science including Geology, Petrology, Mineralogy, and Microbiology is required to understand the genesis of ore deposits. The filed of Resource Geology is essential not only for efficient exploration and development of ore deposits but also for better understanding and assessment of hazardous elements that may be caused by resources development. This session widely covers various topics of field investigation and observation, laboratory experiments, theoretical calculation, development of analytical methods and others related to the supracrustal migration and concentration of elements.

[SRD33-P07]GRANITES FORM HAVING W-MO ORES, REE PEGMATITES, AND GEOCHEMISTRY, IMPLICATE AN FLUID ABSENT MELT CRYSTALLIZATION

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A flat, sheet like granite intrusions having W-Mo ores has been determined during exploration of the Eguzer deposit in 1970 - 80 y. This deposit is located in Sukhbaatar province of south-east Mongolia. Two greisenized flat form leucogranites have been documented by drill holes. The two greisenized intrusions were separately occurred from each other among the Carboniferous plagioclase dominant granite. The quartz- wolframite veins exposure at the surface was led to the exploration work. The feeder channels have been proposed for the each flat granite. Three type ores were identified of greisenized granites. They are; rare metal, sulphide and quartz-fluorine. Such flat form granites are noticed from another W -Mo deposits as Arbayan, Uvurbayan in Sukhbaatar province. The granites of these deposits show low Ba, Sr high Rb anomalies in multi-elements diagram, which implies a crystallization of fluid absent melting (Harris et al., 1993). The Li content ranges from 700 to 1100 ppm in granites.

The Khanbogd is big peralkaline pluton, in Southern Mongolia with pegmatites of high concentration of LREE. The Khanbogd pluton composed of two elliptic bodies; main and small, which are well reflected in the satellite images. Flat or laccolith in shape was determined from modeling of gravity data (Kovalenko et al, 2007). According to this model, the northern part of the pluton is the thickest (15 km) and the thickest decreases southerly to about 7 km. A recent study shows a collection of flat or sheet like intrusions in two bodies, by the interpretation of Landsat images. For example, the main body consists of four flat or semi flat intrusions. The most REE rich pegmatites are located in first arc shape like flat intrusion. In the multi-element distribution diagram the fluid absent character is observed from low of

Ba, Sr and high of Pb, Th, U, Li (Batulzii, 2017). The above mentioned granites show not symmetric flat chondrite-normalized REE patterns with the strong Eu negative anomaly.
There is alkali syenite and granite pluton Ulantolgoi, in western Mongolia. The Ta-Nb-Zr concentration has estimated from alkali granite of latest phase after alkali syenite. The ferrous minerals for granite and syenite are riebeckite and biotite. The pluton also elliptic in surface same as Khanbogd pluton. The core samples logging and Ta-Nb-Zr concentration show flat form intrusions of different feeder.
The main citation to laccoliths, sills- sheets and ring dike is that those are intrusions associated with magma at shallow depths. This involves that the magma ascends along a plane of fault or bedding in host rocks and forming a relatively sheet or flattened form in direction (Petford, 2008).

That’s the pluton Khanbogd is formed by collection, at least 4 sheet like intrusions in two separate magmatic bodies, which were ascended along disk like fracture planes country rock from shallow depth magma source. High content of fluid immobile elements (Li, U, F), and low of Ba, Sr show a magma crystallization of fluid absent melting.
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