

Geochemistry of two mica per-aluminous mylonitic granite in Noghan Bridge, Sanandaj-Sirjan Zone

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Abstract: Noghan granitoid intrusion is located at the NW of Boin- Miandasht and lies in the Sanandaj-Sirjan structural zone (SSZ). Based on field evidence and petrographic studies, the pluton is considered as two-mica granite that has been strongly affected by deformation and shows a good mylonitic foliation study area. The main minerals in the pluton are quartz, alkali feldspar (microcline and perthite), plagioclase, biotite, muscovite and the accessory minerals are monazite, apatite, epidote, zoisite, clinozoisite, allanite and opaque minerals which form the rock groundmass. Petrographic and geochemical studies indicate that the Noghan bridge plutonic rocks are of MPG and PLGS types, having calc-alkaline to high potassium calc-alkaline and peraluminous nature. On chondrite and primitive mantle-normalized spider diagrams, the REE pattern has a negative slope and definite negative anomaly of Eu, and they display enrichment of LILE and LREE and depletion of HREE and HFSE, along with negative anomalies of Nb, Sr, P, Ti and positive anomalies of Cs, K, Pb which are typical of magmatism in subduction-zone environment especially leucogranites in the active continental-margin. The tectonic settings of the leucogranite is post orogenic environment. The geochemistry of accessory and trace minerals suggest derivation from partial melting of meta pelites in the upper part of thickened crust

Keywords: *Two mica granite, peraluminous, post-orogenic granitoid, Noghan Bridge, Sanandaj-Sirjan Zone.*

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