

Petrography and geochemistry of intrusive-subvolcanic bodies and their association with iron mineralization in Bisheh area (East Iran, South of Birjand)

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Abstract: The study area is located in North-East of Lut block, and in Basiran Geological Quadrangle Map (1:100000). Tertiary intrusive-subvolcanic rocks intruded Paleocene limestone and formed skarn and Iron mineralization. Petrographic studies show that rocks are Hbl-diorite porphyry, Hbl-qtz- diorite porphyry, Px- diorite porphyry, Hbl-px- diorite porphyry, Hbl-diorite and Bt-diorite. These rocks are subalkaline, meta-aluminous and based on magnetic susceptibility and geochemical features; they belong to magnetite series and I-type granitoids. Enrichment of samples in LREE and depletion in HREE and small negative Eu anomalies imply continental margin volcanic arc metaluminous I-type magmatism. Depletion in HREE probably is due to garnet in source. On the tectonic discrimination diagrams, all samples fall within the volcanic arc granite. Different geochemical diagrams show correlation between Bishe granitoids and intrusions associated with Iron skarns.

Keywords: *Lut; iron skarn; granitoid; Bisheh.*

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