

Petrographical, geochemical and petrological characteristics of felsic intrusives from Pirkuh region in Guilan state

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Abstract: Pirkuh region is a part of western Alborz. The outcrops in this region are mostly Paleogene volcanosedimentary successions which are crossed by several intrusives. Some of these intrusives have monzogabbroic, monzonitic and granitic compositions with granular or porphyritic textures. Pronounced harmony among REE patterns of these rocks like more enrichment of LREE than HREE, flat pattern of HREE, negative EU anomaly, steep LREE and smooth MREE slopes, all certify common origin for them. Metaluminous character, existence of normative diopside, presence of clinopyroxene as major mafic mineral in all groups (even in granitic rocks) with biotite, lack of mica-rich metamorphic enclaves, high relative Na₂O content, Al, Ga and Y behaviors, K₂O/MgO weight ratio, SiO₂ weight percent variation ranges, low K₂O/Na₂O ratio, enrichment of LREE to HREE all are suggestive of I nature for these intrusives, and Zr behavior against SiO₂ (increasing in intermediate and decreasing in more felsic rocks) are representative of Zr-undersaturated original magma because of high temperature. Therefore Pirkuh region intrusives are set as high temperature I type granite category (similar behavior of Ba, Ce and Y confirm this claim). The REE pattern and position of Pirkuh intrusive data on discrimination diagrams shows that they belong to a continental arc (VAG) setting.

Keywords: *Pirkuh; granitic; monzonitic; high temperature; arc.*

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