

Petrography, geochemistry and determination of temperature and pressure of crystallization of pyroxene and plagioclase minerals in diabasic and lamprophyre dykes of Jupar block (south of Kerman)

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Abstract: A set of diabasic and lamprophyre dykes, trending NW-SE, cut the Neogene volcanic rocks that exposed in the south of Kerman city and west of Glomac village. They are characterized by porphyritic and glomeroporphyry textures. Lamprophyres contain coarse-grained phenocryst of olivine- pyroxene- amphibole in a matrix containing feldspars. Diabasic rocks are dominated by main minerals including diopside and feldspar. Thermo-barometric studies of pyroxenes show that the rocks under discussion have formed under pressure of 6 Kb and temperature of 1200°C. Thermometry of the feldspar in dykes show 500- 650 °C. This low temperature caused changes in the freezing point of the feldspar composition during crystallization. Based on the pyroxene chemistry and tectonomagmatic environment diagrams, all of studied samples plot in the island arc setting of a subduction zone and show active continental setting characteristics. The primary magma of the studied rocks is the melting of a lherzolite garnet mantle source.

Keywords: *Diabae; lamprophyre; alkaline; garnet mantle; Central Iran; Jupar.*

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