

Petrogenesis of Chah Torsh apatite-bearing granitic body

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Abstract: Chah Torsh intrusive body in S-W of Nadushan is a small part of extensive magmatism of Oligo-Miocene age in Urumieh-Dokhtar magmatic belt. This is the largest intrusive mass of SW of Nadushan complex which are all outcropped as masses cut through Eocene volcanics. The Chah Torsh intrusion consists of two phases with porphyry and granular textures. Geochemical properties of two phases on the basis of trace elements contents and variations on Harker and spider diagrams indicate that they can be comagmatic. Lower ratio of Rb/K and silicate amount in granular phase in comparison to porphyry phase with higher amounts of HFSE such as Y, Zr, Th, Ta and Ti showing that the granular phase is a poor silica residual resulted from fractional crystallization of monzogranitic porphyritic phase. High amounts of REE in Chah Torsh parent magma from one hand and high K content on the other hand resulted in decreasing P solubility in granodioritic melt causing apatite fractionation.

Keywords: *Granite, Apatite, Urumieh –Dokhtar, Nadushan, Iran*