

## Investigation of crystal size distribution in igneous rocks :Guide to the magma evolution in magma chambers

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**Abstract:** In this study, quantitative textural analysis and crystal size distribution on amphibole, plagioclase and quartz in amphibole phenocrysts were studied by microprobe and thermobarometry techniques, give some information about magma process in magma chambers. Petrographic studies with microprobe and crystal size distribution investigations in Neogene igneous rocks of SW Tehran, demonstrate that there are three populations of amphiboles related to different conditions of crystallization at different depths and point to existence of at least three magma chambers below the volcano in this area. The occurrences of plagioclase in lavas confirm that magma evolution have taken place at lower depth in a magma chamber near the surface of the earth and at the lower fugacity of water.

**Keywords:** *Crystal size distribution, magma evolution, magma chamber*

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