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PRELIMINARY FIELD, PETROGRAPHICAL AND GEOCHEMICAL INVESTIGATIONS ON SYNPLUTONIC DIKES, SOUTHWEST JORDAN

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ABSTRACT

The basement granitoids exposed in Rahma area, South Jordan, consists mafic to intermediate in composition enclaves with variable shapes and sizes. They are interpreted as synplutonic dikes. Mode of occurrence, petrography, whole rock chemistry, and mineral chemistry indicate magma mingling and mixing with the host rock. Features of the magma mingling include dismembering of these dikes into rounded, sub rounded, and irregular shaped mafic enclaves. This mingling process took place at different levels where contact relationship with host rocks varies from sharp to gradational. Microscopic textures such as decreasing grain size of hornblend towards the contact with host rocks, resorbed relatively large plagioclase crystals and presence of acicular apatite are used as a further evidence of interaction between synplutonic dikes and host rocks.

Major, trace and rare earth elements geochemistry indicate that the magma of these dikes are calc-alkaline formed in a subduction zone environment. Furthermore both dikes and host rocks have different sources.

KEYWORDS: *Synplutonic Dikes, Magma Mixing and Mingling, Jordan*

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