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Petrology and Geochemistry of the Metamorphic Rocks of Masal-Shanderman Region (SW Bandar-e-Anzali)

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Abstract: The Shanderman metamorphic complex, located in the west of Gilan Province and southwest of Bandar-e-Anzali, is composed of a variety of metamorphic rocks (including slate, schist, calk-schist, marble, serpentinite, metagabbro and eclogite). Based on petrologic studies, protoliths of these rocks have had ultramafic, gabbro-gabbro noritic and pelitic composition. Mineralogically, the metapelitic rocks contain biotite, chlorite, muscovite, andalusite and metabasitic rocks contain amphibole, garnet, olivine, pyroxene and serpentine. Predominant texture of the rocks is porphyrolepidoblastic or nematoblastic. Zr/Y ratio of these rocks, which is less than 3, shows that they are similar to oceanic island arc rocks. Negative anomalies of Ti, P, and K and positive anomaly of Pb (appeared in spider diagrams) are evidences for their relation to crustal assimilated subduction zones. Distribution pattern of trace elements such Th, Hf, La, and U in the studied metapelites indicates a transition from passive margin towards island arc. The characteristics of the studied assemblage show that it was developed in an oceanic passive margin and then evolved within subduction zone.

Keywords: *Shanderman metamorphic complex; petrology; geochemistry; metabasite; metapelite; passive margin; subduction zone.*

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