

## Evidence of In-situ partial melting at the boundary between upper gabbro unit and sheeted dike complex in the Oman ophiolite

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Intermediate to acidic rocks usually referred as plagiogranite occur in oceanic crusts. Plagiogranite bodies with various scales appear in the Oman ophiolite. The Suhaylah plagiogranite complex outcropping at the southern margin of the Fizh block of the northern Oman ophiolite, appears in the transitional zone from the gabbroic sequence to the sheeted dyke complex. The Suhaylah body is the largest plagiogranite complex in the Oman ophiolite studied so far, and extends about 3x4km. The Suhaylah plagiogranite complex shows heterogeneous occurrence and is composed of various lithofacies such as leuco gabbros-diorites, quartz diorites and tonalites. A systematic variation of lithofacies depending on stratigraphic position is present. The lowest part of the complex (western part of the complex) consists of leuco gabbroic-dioritic rocks. They are gradually changed from the lower gabbroic rocks (Upper gabbro unit). The middle part consists of quartz dioritic rocks, which are also gradually changed from the lower rocks. The uppermost part (eastern part of the complex) consists of tonalitic dykes. The plagiogranite complex contains numerous xenoliths and enclaves possibly derived from dyke complexes and the gabbros. They are extremely common and make up 10-30% volume, in particular, attains 50% at southeast area.

Along the lowest stratigraphic position, we found curious rocks from the gabbroic-dioritic rocks. There're two types of occurrence, one is dioritic rocks with numerous mafic clots ranging from a few millimeters to centimeters composed of orthopyroxene-clinopyroxene-plagioclase. Another curious rocks occur as large blocks attaining about 10 meters. These blocks are characterized by reddish color and characterized by abundant appearance of orthopyroxene. It is noted that These rocks do not contain primary amphiboles. The microscopic texture is very heterogeneous, consisting of globular coarse-grained aggregates of orthopyroxene-clinopyroxene-oxide and heterogeneous matrix consisting of plagioclase-orthopyroxene-clinopyroxene-oxide with variable quartz. The coarse-grain aggregations are wrapped by quartz. This curious rocks may reveal an in situ partial melting in oceanic crusts. We show mode of occurrence, petrography and geochemical data on these curious rocks and discuss for the petrogenesis.