



## **Petrographical, geochemical and mineralization evidences for Eocene hybrid volcanic rocks of south Lushan area (Alborz Zone, Iran)**

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The Lushan area belongs to West Alborz structural zone and it is a part of Sofla Tarom region. Rock units are consisted of olivine basalt, andesite, trachy andesite, dacite and rhyodacite with Eocene age. Basalts are related to alkaline series with high potassium content and intermediate and acidic terms are related to calc-alkaline series with intermediate to high potassium content. Field observation, petrographic and geochemical evidences lead to fractionation, mixing, contamination and crustal melting phenomenon in formation of intermediate- acidic terms. The hybrid intermediate lavas show two (or three) types of volcanic glass with basic to acidic compositions in a unique rock. The basic micropillow – type enclaves in acidic matrix, resorption and corrosion of phenocrysts (plagioclase, clinopyroxene) in hybrid rocks and the presence of quartz xenocrysts in basic lava with pyroxene reaction rims are some indication of magmatic contamination. The alteration is one of important characterizes of this area. Alteration zones are very wide spread and consist of argillic- alunitic and silicic parts. Formation of this alteration zones is a result of high sulfide alteration solutions effect on volcanic units. Some times alteration is of supergene type and resulted from atmospheric solutions influence on the country's rocks. This kind of alteration is mostly argillic. Some Au-epithermal and poly metal mineralization (Pb-An+Cu) are found in the hybrid altered volcanic rocks.