

## **GEOLOGY OF TERTIARY VOLCANICS IN MASHKAN AREA , NORTHEAST OF IRAN**

Baharfirooz, K. Geological Survey of Iran, Tehran, Iran.  
Sayyareh ,A.Z. Geological Survey of Iran, Tehran , Iran.

The region is located at eastern part of Alborz mountains range, having cold winter and moderate to hot summer. Most of the outcrops are composed of volcanic rocks of Cenozoic age, including lavas, pyroclastics and some subvolcanic rocks. The Sabzevar ophiolite zone is situated in the southern part of the area. Formation of the volcanic rocks is in relation with emplacement of Sabzevar ophiolite complex.

Geochemical, petrological and geological evidences suggest a geodynamic setting related to collision between an oceanic island arc (with andesitic volcanism), and the continental margin of Turan plate. The volcanic rocks obviously migrated from south to north in the course of time. The youngest volcanics outcropped in the northern part of the area, are small, nontectonized domes with a trachyandesitic composition. A belt of Eocen volcanic rocks run from the southeast to northwest of the area which include trachyandesite, andesitebasalt, basalt, trachite, andesite and a few subacidic rocks (dacite).

Few post Eocene subvolcanic rocks intruded into Eocene volcanics as domes and dikes. All of volcanic rocks of the area have calcalkaline trend and show destructive plate margin environment. The Neishapoor famous turquoise deposit situated in the southeast of the area.

Some indices of copper, Iron, Manganese mineralization are found within the Eocen magmatic belt. There is a zonality of mineralization of Copper as Cu-carbonate in northwest and Cu-silicate (Chrysocolla) in southeast of Eocene magmatic arc. The Chrysocolla in association with calcedony has a gemstone viability.