IRANIAN SOCIETY of CRYSTALLOGRAPHY and MINERALOGY

Vol. 20, No. 3, Fall 1391/2012

IRANIAN JOURNAL of CRYSTALLOGRAPHY and MINERALOGY

# Petrogrphy, mineralchemistry and geothermobarometery of enclaves in the Kuh –e- Barandeh volcanic dome (east of Kousf)

**M. H. Yousefzadeh*[1], M. Sabzehei[2]**

*1. Department of Geology, Faculty of Sciences, Birjand University, Birjand, Iran.*
*2. Geological Survey of Iran, Tehran, Iran*

(Received: 2/4/2011, in revised form: 23/8/2011)

**Abstract:** The composition of Kuh-e- Barandeh volcanic dome is andesite, dacitic andesite and dacite of calc-alkaline affinity. A prominent feature of this dome is the presence of various types of enclaves with different composition, shape and size. Detailed field and laboratory investigation proved that they are of xenolith and autolith types. The xenoliths are of pelitic and basic protoliths. Xenoliths show two distinct metamorphic events: (1) Regional dynamomorphic event justified by clear preferred orientation and foliation. (2) Thermal metamorphism producing andalusite, sillimanite, cordierite and spinel at the expense of former minerals like biotite, muscovite etc in pelitic rock and green hornblend at the expense of brown hornblend in basic rock. T. P measurement shows that these xenoliths have suffered a range of T.P (768-830 ˚C and 5-7 Kb) during regional metamorphism and a retrograde contact metamorphism (747- 821 ˚C and 3.6-6.7 Kb).

**Keywords:** *Volcanic dome; enclave; Xenolith; autolite; Kuh-e- Barandeh; Khousf.*

متن فارسی اصل مقاله از صفحه ۴۹۱ تا ۵۰۴ در این شماره به چاپ رسیده است.

* Corresponding author, Tel:09153620118, Fax: (0561) 2502515,E-mail:mhyousefzadeh@yahoo.com