IRANIAN SOCIETY of CRYSTALLOGRAPHY and MINERALOGY

Vol. 27, No. 1, Spring 1398/2019

IRANIAN JOURNAL of CRYSTALLOGRAPHY and MINERALOGY

The study of continuous and discontinuous zoning of garnet mineral in the migmatites of the Hamedan region and its petrogenetic applications

S. R. Jafari[1], A.A. Sepahi[*2], M. Moazzen[3], H. Shahbazi[2]

1- Department of Geology, Science Faculty, Payam Noor University, Tehran, Iran
2- Department of Geology, Faculty of Basic Sciences, Bu-Ali Sina University, Hamedan, Iran
3- Department of Geology, Faculty of natural Sciences, University of Tabriz, Tabriz, Iran

(Received: 29/1/2018, in revised form: 2/6/2018)

Abstract: In the Hamedan region, migmatitic rocks with various structures cropped out that stromatic structure is the most abundant. Index minerals of metapelites such as garnet (almandine), staurolite, andalusite, sillimanite, kyanite, fibrolite, cordierite, plagioclase (andesine) and spinel (hercynite) are present in these rocks. Garnet has occurred in all three parts of leucosome, paleosome, and melanosome of migmatites and has been affected by various metamorphic events (progressive, retrograde, and partial melting). Garnets have continuous and discontinuous chemical zoning for index elements Fe, Mg, Mn and Ca, where the behavior of these elements is not the same. Some factors such as the presence of multi-nucleus single crystals, the participation or none participation of garnets in the process of partial melting and polymetamorphism of area have important role in it. The discontinuity in the growth of crystals represents a re-growth during an individual metamorphic event, and it can represent two metamorphic events.

Kaywords: *Zoning; garnet; partial melting; migmatite; Hamedan.*

متن فارسی اصل مقاله از صفحه ۳۱ تا ۴۶ در این شماره به چاپ رسیده است.

[*]Corresponding auther, Tel: (081)38381601-9, Fax: (081)38381172, Email: aasepahi@gmail.com