IRANIAN SOCIETY of CRYSTALLOGRAPHY and MINERALOGY

Vol. 27, No. 3, Fall 1398/2019

IRANIAN JOURNAL of CRYSTALLOGRAPHY and MINERALOGY

Damanghor intermediate sulfidation epithermal Au mineralization, Northern Bardaskan: geology, alteration, mineralization, and geochemistry

H. Abbasnia[1], M.H. Karimpour[*2], A. Malekzadeh Shafaroudi[2]

1- Department of Geology, Faculty of Science, Ferdowsi University of Mashhad, Mashhad, Iran
2- Research Center for Ore Deposit of Eastern Iran, Faculty of Science, Ferdowsi University of Mashhad, Mashhad, Iran

(Received: 10/9/2018, in revised form: 6/1/2019)

Abstract: The Damanghor gold mineralization occurrence is located in north of Bardaskan, Khorasan Razavi Province, and Taknar zone.The geology of the area consists of Precambrian green sericite schist and metarhyolite, intruded by diabase. Mineralization in this area is in vein form with N50E stribe and 70NW dip and hosted by schist and metarhyolite with 300 meters length and 2 to 35 meters width. Disseminated and veinlet mineralization includes primary minerals of pyrite and chalcopyrite and secondary minerals such as covelit, malachite, azureite, hematite, goethite and limonite with quartz, sericite, and lesser clay minerals. Silicic-sericitic alteration is the most important alteration zone associated with mineralization. Based on rock samples taken from explorative trenches, gold anomalies range from 0.3 to 12.5 ppm, silver up to 30 ppm, copper up to 860 ppm, and zinc about 9252 ppm.Based on the evidence of host rock, the type and extent of alteration, structural control, shape and type of mineralization and primary minerals and geochemical anomalies, the occurrence of Damanghor gold mineralization is epithermal with intermediate sulfidation state that is related to hydrothremal derived from Cenozoic magmatic activities.

Keywords: *Mineralization; alteration; geochemistry; intermediate-sulfidation state; epithermal gold; Damanghor; Taknar Structural zone.*

[*]Corresponding Author: Tel: 05138804051, Fax: 05138796416 Email: karimpur@um.ac.ir

[DOI: 10.29252/ijcm.27.3.621]