Paper Number: 5628

Metallogeny of Tarom – Hashtjin Mountains and various mineralization types

Mansour Ghorbani[1,2*] and Mohsen Ghorbani[2]

[1] Shahid Beheshti University, Faculty of GeoScience, Tehran, Iran, m_ghorbani@hotmail.com
[2] Pars Geological Research Center Arian Zamin (PGRCAZ), Tehran, Iran.

Introduction

Based on structural units classification Tarom Mountains are located in western Alborz zone. From the geological standpoint and considering the tectono-magmatic and mineralization aspects Tarom area can be defined as a metallogenic subzone. These mountains mainly consist of Tertiary volcanic rocks and granitoid bodies that form an asymmetric anticline whose northeast flank reaches to Manjil basin, and its shorter southwest flank ends in Zanjan plain.

Facts and findings

With regards to studies performed to this date, mineralization of metals such as copper, lead and zinc, iron and gold are seen in form of vein and disseminated within the area. According to results from studying thin sections, polished-sections, chemical analysis and field observations it can be stated that the genesis of deposits in Tarom area is of hydrothermal type, and with regards to the paragenesis the mineralization type for copper, gold, and lead and zinc deposits can be defined as mesothermal, and for iron deposits as volcanogenic to magmatic. Andesitic mineralization type is also found in the area as seen in Dahaneh copper deposit.

In addition to andesitic mineralization type there are other mineralization types such as Michigan type, vein polymetal type (Pb, Zn, Cu, Ag, and gold as in Barik-ab deposit), and gold-bearing copper vein type (as in Khalifah-lou deposit)

It is to be noted that most copper mineralization contain high amount of gold that in some cases it could reach up to 10 ppm in veins. Ore-bearing materials are mostly originated from andesitic, andesitic-basaltic and trachytic volcanic rocks, and monzonitic intrusive bodies.

Keywords: Tarom Mountains, polymetal mineralization type, vein mineralization type, andesitic mineralization type, copper, lead and zinc, iron, gold

References

- Peyrovan, 1992, Study of petrography, petrology and geochemistry of intrusive igneous rocks in north of Abhar
- Hajalilou, B, 2000, Metallogeny of Tertiary in Western Alborz-Azerbaijan (Miyaneh to Siyah-rud), Ph.D thesis, Shahid Beheshti University
- Ajayebi, K, 2002, Economic geology of polymetal deposits around Alvand intrusive body (north of Abhar), Master's thesis, Islamic Azad University

- Aghanabati, A, 2004, Geology of Iran, Geological and Mining Exploration of Iran
- Ghorbani, M, 2007, Economic Geology and Natural Resources of Iran, PGRCAZ
- Ghorbani, M, 2008, Economic Geology of Mineral Deposits and Indications of Iran, PGRCAZ