

## Mineralogy and fluid inclusion studies in Mahour copper deposit, east of Lut block, Central Iran

R. Mirzaei Rayeni<sup>\*1</sup>, A. Ahmadi<sup>1</sup>, H. Mirnejad<sup>2</sup>

1- Department of Geology, Faculty of sciences, University of Sistan & Baluchestan

2- Department of Geology, Faculty of sciences, University of Tehran

(Received: 15/3/2011, in revised form: 15/7/2011)

**Abstract:** Mahour polymetal deposit located west of Nehbandan, east-central Iran, formed in hypabyssal acid rocks. Mineralization occurs along a three-km-long vein. Three zones have observed in the ore, downward: 1) leached zone marked by malachite, azurite, hematite, goethite and limonite, 2) supergene zone characterized by bornite, covellite, and chalcocite, and 3) Hypogene zone containing magnetite, chalcopyrite, pyrite, galena, and sphalerite. The significant alterations are silicic, sericitic, and propylitic. Gangue minerals are mainly composed of quartz and calcite. The textures vary from replacement and open-space filling to brecciate. Fluid inclusion study of three samples of sphalerite is indicative of temperature variation of the ore-forming fluids between 194°C and 292°C. Considering the measured ice-melting temperature ( $T_m$  ice), the salinity is estimated to be between 11.7 and 23 equivalent weight of NaCl (wt%). Mineralogical and fluid inclusion evidence such as texture and structure of mineralization, vein mineralization, mineral paragenesis, gangue minerals, wall-rock alteration, homogenization temperature and salinity and trapped fluids, and depth of mineralization, all suggest that the Mahour deposit is a vein-type epithermal to mesothermal deposit.

**Keywords:** *Polymetal; Alteration; Fluid inclusion; Mahour deposit.*

متن فارسی اصل مقاله از صفحه ۳۰۷ تا ۳۱۸ در این شماره به چاپ رسیده است.

---

\*Corresponding author, Tel: 09133979232, Email: rezvanmirzaei.64@gmail.com