



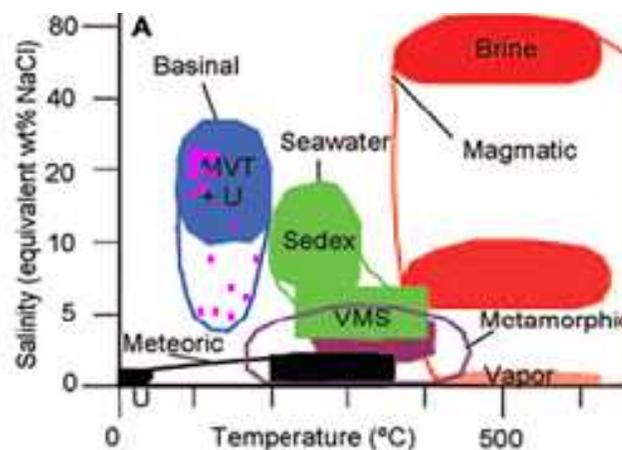
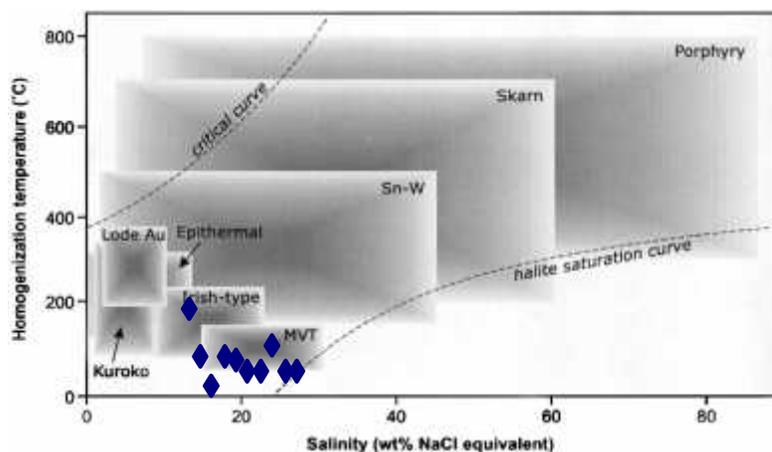
## Geochemical, mineralogical, and genesis of the Darreh-Zanjir Pb-Zn deposit in Yazd, Iran

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The Darreh-Zanjir deposit is located at 25 km south-west of Yazd city in Iran. Lead-Zinc mineralization mainly occurs as the form of lead and zinc carbonates (cerussite and smithsonite), zinc sulfate (anglesite), Hemimorphite associated with lead and zinc sulfides (galena and sphalerite) as well as pyrite. Occurrence of mineralization is mainly as veinlets, cavity fillings and replacement in the dolomitic host rock. Mineralization is controlled by Darreh-Zanjir thrust fault.

Geochemical investigation indicates that the host dolomitic rock is stoichiometric and formed in a reducing environment during burial diagenesis in an open system. Furthermore, based on the Sr versus distance from ore binary diagram, the fluid movement during digenesis was toward the ore body. In this paper, the fluid inclusion microthermometry of sphalerite has been investigated. The results indicate the distribution of almost two-phase fluid inclusions ( $L < V$ ). Microthermometry results show that first ice melting temperature ( $T_e$ ) ranges from  $-25$  to  $-38$  °C, salinity ranges between 7 wt% to 20 wt% eq NaCl and homogenisation temperature varies 80 to 187 °C. Moderate salinity (average 16% NaCl), low temperature (133 °C), and absent of clathrate phase is indicator of basinal fluids. The diversity of fluid inclusion results reflects two or more involved fluids with different chemical composition which control mineralization. On the basis of fluid inclusion data, Darreh-Zanjir Zn-Pb deposit is comparable to MVT type Pb-Zn deposits.



**Keywords:** dolomitization, Zn-Pb deposit, fluid inclusion, Darreh-Zanjir

### Biography

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