

Understanding of Geodynamic Setting of the Metamorphic Complex Associated with Fe-Mn Mineralizations (NW Iran)

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The significant iron deposits occurred in the Takab region in the northwest of Iran with the late Neoproterozoic age. Siliceous banded and nodular iron ores are interlayered with mica-schists and amphibolites. The iron ore is predominately composed of quartz and iron-oxides. Isotopic analyses, including Fe isotope and U-Pb zircon dating, have been provided from the iron ore formation as well as the plutonic bodies in the Takab region. The Fe isotope analyses were carried out on all parts of the ores. The $\delta^{56}\text{Fe}$ values observed for magnetite decrease from disseminated to nodular iron ore (averages: +1.3, +0.4, and -0.4 ‰ (± 0.2 ‰), respectively). The Fe isotopes of hematite in disseminated and layered ore show higher $\delta^{56}\text{Fe}$ values than those of magnetite (range from +2 to +4 ‰ (± 0.2 ‰)). The U-Pb analyses are still ongoing, and final interpretation has to be performed. The U-Pb dating of detrital zircon in the mica-schist sample associated with the iron layer suggest deposition age of 550-650 Ma for iron ore.

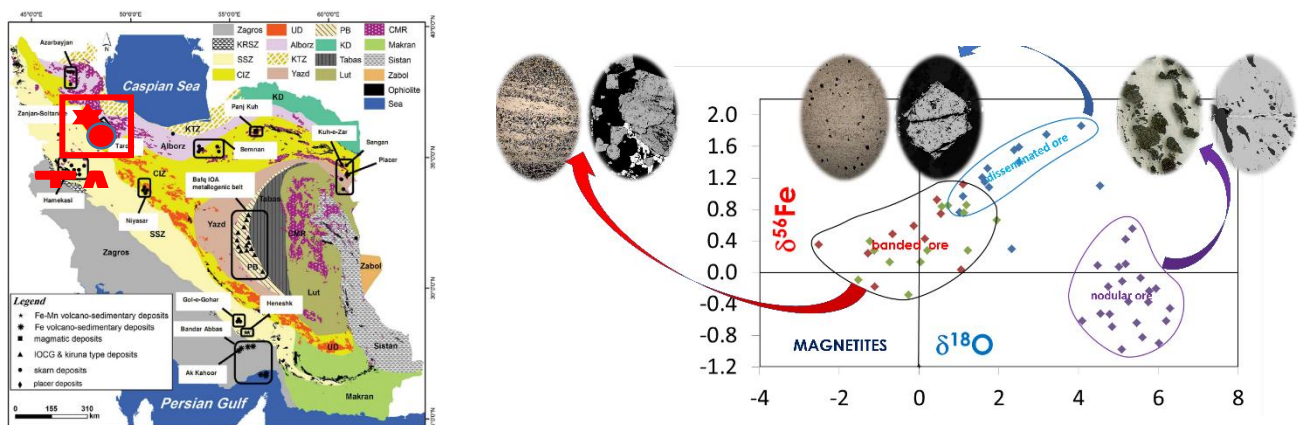


Fig. 1. Left: Simplified geological map of Iran showing location of studied area, Right: the status of Takab iron ore in the $\delta^{56}\text{Fe}$ v. $\delta^{18}\text{O}$ diagram

Conferences:

- Orberger, B., Wagner, Ch., Boudouma, O., Fialin, M., Derré, C., Nabatian, Gh., Honarmand, M., Monsef, I., Ghods, A. (2017) Iron-oxide mineralogy of banded iron formations in the Takab region, North Western Iran, TRIGGER, Geological Survey of Iran.
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