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Research Paper

Magnetite flow and its Relation with the magmatic rocks, Shahrak Region, NW of Kurdistan, Iran

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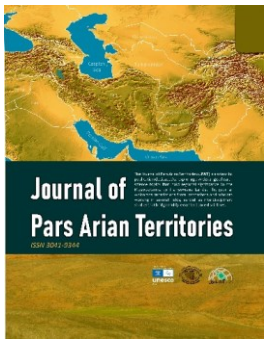

Abstract

Shahrak iron deposit is located in the northwest of Iran, northeast of Kurdistan Province, 60 km north of the city of Bijar, and 20 km west of Hassan Abad Yasoukand District. Shahrak iron deposit is part of the Cenozoic magmatism of Urumieh- Dokhtar complex and escaped in Takab deposit. The Oligo-Miocene rock units are the host rock for iron mineralization. The most important and comprehensive event in the formation of Iranian crust was the Cenozoic magmatic events that occurred in the Alpine orogeny phase, and during which the Alpine-Himalaya mountain range was affected in the Shahrak area, magmatic activities from Eocene to Miocene can be traced.The magmatic rocks consist of acidic and andesitic volcanic rocks and subvolcanic rocks. In terms of magmatic series and tectonic setting, the magmatic rocks of the area are calc-alkaline in subduction zones. The tectonic environment of these magmatic rocks is similar to the orogenic associated with subduction zones. The main ore minerals of this deposit is magnetite, although along with the main mineralization of magnetite, secondary minerals such as pyrite, chalcopyrite, pyrrhotite and secondary minerals of iron oxides such as goethite and hematite are also seen. Hematite and goethite are not primary and their amount in the ore is very small. The mineral deposit is found in the form of scattered lenses, mainly on the limestone and rhyolite rocks of the Aquitanian- Burdigalian ages and/or among the andesite rocks. The mineralogical, field observation, and chemical evidence and the surrounding rocks imply a volcanogenic origin for this deposit, and part of the mineralization can be considered to have occurred as magnetite flow. Magnetite lava, which has erupted in a small volume compared to the volume of rhyolitic magma in the form of magnetite flow, has acted like a lava, which has been named magnetite flow.

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