



The study of hydrothermal alteration zones in Kahang exploration area (north eastern of Isfahan, central of Iran) using microscopy studies and TM and Aster satellite data

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Kahang ore deposit located in 73 km to the northeast of Isfahan city and 10 km to the east of Zefreh town, covering an area about 18.6 km². This ore deposit is a part of Uromieh-Dokhtar volcanopolotonic belt. The rocks of the area included Andesite, Porphyritic Andesite, Dacite, Porphyritic, Rhyodacite, Diorite, Quartz Monzonite and Porphyry Micro Granite. In plutons, there is a trend from basic to acid features along with decreasing of age from margin to center of massive. Kahang region is an alteration and breccia zone. The occurrence of alteration zones and iron oxides were confirmed by satellite images processing. Generally, more than 90% of rocks of this region have been affected by hydrothermal fluids. Remote sensing refers to detection and measurement from a distance. For the first time, this exploration area was studied using satellite images processing (TM) and primary results showed that is suitable place for resources of Copper (Cu) and Molybdenum (Mo). Hydrothermal alteration commonly occurs in geothermal areas in association with ore deposits producing alteration assemblages typically dominated by silicates, sulfides, sulfates and carbonates. In the alteration zones studies the subject discussed is the study of existing minerals in such zones and study of chemical specifications of altering fluids. Four alteration zones Based on observations derived from the study of thin sections, XRD analysis and deep remote sensing using TM and Aster satellite images studies could be identified in this area: propylitic alteration zone with chlorite, epidot, calcite; argillic alteration zone with clay minerals; phyllic (qartz-sericite) alteration zone with quartz, sericite and pyrite and silicic alteration zone with abundant quartz.