

Geology of sungun porphyritic deposit

Baharfirooz, K. Geological Survey of Iran, Tehran, Iran.

Yaghoobpoor, A. Teacher Training University, Tehran, Iran.

The Sungun deposit situated 100km northeast of Tabriz city, northwest of Iran. This deposit is a skarn porphyritic copper, Molybdenium type that has been formed in a magmatic arc system, Presumably in continental margin environment.

Subvolcanic rocks such as granodiorite, Latite, syenomonzonite, quartz monzonite and andesi-basaltic Volcanic, are the main rock units of the area. the granodiorite stock has been considered as the main agent of allevation and mineralization.

In the east and north parts of deposit, cretaceous calcareous sedimentary rocks in the vicinity of stock, have been metamorphosed and formed skarn deposit of Cu, Mo, Pb, Zn and Fe. In the main porphyritic orebody, pyrite, chalcopyrite, molybdenite, galena and sphalerite are the most important are minerals and the only important copper mineral is chalcopyrite.

Mineral assemblage of pyrite, chalcopyrite, molybdenite is Located in central and deep parts of deposit while pyrite, chalcopyrite are situated around and top parts of deposit, and finally pyrite, Low chalcopy are covering these assemblages.

Alteration zones of potassic, phyllic, argillic and propylitic are found in the area. Potassic alteration zone is characterized with neoformed alkali-feldspar or secondary biotite. Two kind of potassic alteration have been recognized in the main porphyritic ore deposit and in contact of skarn. The latter lacks any copper mineralization but the first one has a lot of disseminated chalcopyrite and pyrite. Phyllic and phyllic-carbonate alteration with stockwork mineralization of pyrite and chalcopyrite, propylitic zone with pyrite dominated mineralization are found in the area.