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TORGHABEH MESOZONAL OROGENIC (PYRRHOTITE, PYRITE, ARSENOPYRITE) GOLD DEPOSIT, FORMED IN SHEAR ZONES WITHIN ILMENITE-TYPE GRANITOID ROCKS

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The Torghabeh gold mineralized area is part of collision zone formed during Late Paleozoic-Early Triassic time due to collision of Iran and Turan Plates. Oldest exposed rocks are meta-ophiolite and meta-flysch (Paleo-Tethys remnants). Dehnow- Vakilabad - Torghabeh tonalite- granodiorite (Early Mesozoic age) intruded low grade regional metamorphosed rocks of Late Paleozoic. Different types of schists were formed around the contact. Tonalite-granodiorite has low values of magnetic susceptibility [(1.5 to 2.5) * 10^{-5}SI], therefore, it belongs to ilmenite series or reduced-type granite.
Mineralization is found within shear zones. The shear zones cut all of the exposed rocks, then, mineralization i younger than these rocks. Gold mineralization was associated with silica rich fluid. Parageneses from depth to the surface are: I) arsenopyrite - pyrrhotite - gold, (2) pyrite - arsenopyrite - gold and (3) pyrite - gold- galen Gold is mainly associated with pyrite and arsenopyrite. The elemental content of Ag, Bi, Cu, Sb, Sn, Pb, Zn an W is low. Gold grade varies between 0.5 to 56 ppm and is less than 5 ppm on average. The width of mineralization is between 0.4 to 2.5 meters.
Torghabeh deposit is mesozonal orogenic type gold deposit. The ore bearing solution was in reducing stage, l in Sand T=420^{o}C, pH=7, Log fO2<-40, Log fS2<-14

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