

عنوان مقاله:

Optimization of Process Parameters for Enhanced Up-gradation of Qilla Saifullah Copper ore through Froth Floatation Technique

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خلاصه مقاله:

In this work, we focus on the up-gradation of the copper ore of Qilla Saifullah in Pakistan through the froth floatation technique. The chemical analysis of the head copper ore sample reveal the presence of ۲.۸۵% Cu, ۲۲% Fe₂O₃, ۵۲.۹% SiO₂, and other minor minerals. The optimum grinding time and liberation size of the copper ore have been determined as ۳۰ minutes and +۱۴۹-۱۰۵ μm, respectively, for further processing. The chemical reagents are optimized in order to get a maximum grade and recovery of the copper ore. After comparisons and analysis of the results obtained, it can be concluded that the maximum grade and recovery of the copper ore are achieved at the dosage ۳۰۰ (g/t) of the collector potassium amyl xanthate (C₆H₁₁KOS₂), ۲۵۰ g/t of pine oil, ۲۵۰ g/t of a depressant (Na₂SiO₃), conditioning time of ۱۰ minutes for a collector, flotation time of ۶ and ۱۰ minutes, and pH of ۱۰ using the froth floatation technique.

کلمات کلیدی:

Chalcopyrite, Froth floatation, Extraction of Copper, Copper ore, Iron oxide

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