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硅胶-聚合胺树脂从模拟低品位铜矿浸出液中富集纯化铜

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摘 要: 研究SP-C硅胶-聚合胺树脂在模拟低品位铜矿硫酸浸出液中富集纯化铜的工艺, 在 Cu^{2+} 1~2 g/L、 Fe^{3+} 2~8 g/L范围内, 考察该树脂吸附分离铜铁的性能。结果表明: 该树脂对铜具有良好的选择性能, 对铁的选择性能较差; 湿树脂铜的穿漏交换容量及饱和交换容量分别为0.27和0.34 mol/L, 解析高峰液 Cu^{2+} 约30 g/L, 铜铁分离系数达到397; 最佳工艺条件为: 料液pH 1.86, 接触时间30 min。

关键字: 铜; 铁; 硅胶-聚合胺树脂; 硫酸浸出液; 离子交换; 分离; 富集; 纯化

Enrichment and purification of copper from simulated leaching solution of low grade copper ores with silicagel-polyamine resin

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Abstract: The enrichment and the purification of copper from a simulated sulfate leaching solution of low grade copper ore with SP-C resin, a novel silicagel-polyamine composite chelating resin, were studied. The separations of copper and iron from solution containing Cu^{2+} of 1~2 g/L and Fe^{3+} of 2~8 g/L were investigated. The results show that the resin has good selectivity for copper from iron. The operational exchange capacity and saturate exchange capacity of copper for wet resin are 0.27 and 0.34 mol/L, respectively. The peak concentration of copper is about 30 g/L in desorption solution and separation coefficient of copper and iron is 397. The optimal operation conditions are solution pH of 1.86 and contact time of 30 min.

Key words: copper; iron; silicagel-polyamine resin; sulfate leaching solution; ion exchange; separation; enrichment; purification

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