عنوان مقاله:

Antimony removal from Sarcheshmeh copper refinery solution using IX resins

محل انتشار:

هشتمین کنفرانس و نمایشگاه بین‌المللی مهندسی مواد و متالورژی و سیزدهمین همایش ملی مشترک انجمن مهندسی متالورژی و مواد ایران و انجمن ریخته گری ایران (سال: 1398)

تعداد صفحات اصل مقاله: 11

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خلاصه مقاله:

Minor elements (As, Sb and Bi) have detrimental effects on the quality of copper cathode. These impurities can adversely affect the cathode selling price by lowering the copper grade. Antimony, in particular, can cause the formation of floating slime during the electrorefining process, increasing the possibility of anodic passivation, increasing the cathode impurity and the cathode brittleness. In this research, CEC370 and Purolite S957 ion exchange resins in column were used for Sb removal from the electrorefining solution of Sarcheshmeh copper refinery containing 2.86gr/l Sb. The resin saturation concentration was measured as a function of electrolyte flow rate to the resin bed volume. Similarly, the resin elution capacity was measured. In the extraction stage, 11 liters of electrolyte were continuously passed through 50 ml of resin. In the stripping stage on the other hand, 4 liters of 6M hydrochloric acid (80% bed volume) was used for elution. The resin poisoning limit was measured by circulating the solution 25 times for both extraction and stripping stage. During the extraction stage, absorption of 0.0643 gr Sb/ml resin (1.48 gr/l Sb) was obtained. The 0.045 gr Sb/ml resin (1.30 gr/l Sb) was also reported to be eluted over stripping stage

کلمات کلیدی:

NICICo, Ion exchange, Antimony, electrorefining, passivation, Purolite S957 resin, CEC370 resin

لینک ثابت مقاله در پایگاه سیویلیکا: