عنوان مقاله:

The Flotation System Optimization in Alborz-Sharghi Coal Washing Plant; A Laboratory Study

محل انتشار:

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خلاصه مقاله:

This paper tries to determine an optimum condition for the flotation operation of the Alborz-Sharghi coal washing plant. For this purpose, a series of comprehensive experiments have been conducted on representative samples from feed of the flotation system of the plant. Four operational variables such as the collector dosage (Fuel oil), the frother dosages (MIBC), the pulp density percent and the impeller speed were taken into account. After obtaining representative samples, 81 required experiments were designed using the orthogonal array (34) of Taguchi method. Three levels of the variables amount including low, base and high were considered for the experiments. The most obvious finding to emerge from this study was that the optimum flotation recovery (61.09 %) is obtained in the base level (L-2) of the collector dosage, the lowest level (L-1) of MIBC and the highest levels (L-3) of the pulp density and the impeller speed. The sensitivity analysis of the variables also indicated that the increase in the collector dosage causes to increase in the total recovery of the flotation and the coal quality. Besides, the largest effect on total recovery was clearly related to the pulp density levels. The increase in values of the pulp density causes to decrease in the recovery values.

کلمات کلیدی:

Flotation system, Operational variables, Optimum recovery, Alborz-Sharghi coal washing plant