Abstract

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Non-traditional operating conditions for a copper concentrate continuous bioleaching
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Abstract

The Polish copper concentrate subject of this study is produced by flotation from a black shale organic rich ore. Due to ore specific properties, flotation indexes have always been poor in the Polish concentrator. Moreover, in the last 5-6 years, ore characteristics dramatically changed and the concentrate grades (mostly Cu and As) degraded. As a consequence, research on alternative technologies to pyrometallurgy is necessary. Bioleaching efficiency was already demonstrated during the BioShale FP6 European project. However, some improvements were still needed to be achieved in order to meet process economic viability. In the frame of Promine FP7 European project, our study aimed at improving the profitability of the continuous bioleaching of the copper concentrate in stirred tank reactors. Non traditional operating conditions were tested: high solids concentration (> 20% solids), reduced agitation and aeration rates. The follow-up of the experiment consisted in both physical parameters measurements (pH, Eh, oxygen uptake rates…) but also in the monitoring of the bacterial population using molecular biology techniques.

For more information :
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