Flotation Optimization Application

Datasheet

IntelliSense.io's Flotation Optimization application guides metallurgists, operators and lower level control systems on how to operate the flotation circuit to achieve optimal performance.

The Problems Faced by Flotation Circuits

The purpose of a Flotation circuit is to concentrate feed ore to the desired metal grade, losing as little as possible of the desired metal in the process.

Achieving throughput, grade and recovery targets is challenging as operators face a reactive and manual approach (i.e. responding to the appearance of the froth) that is compounded by:

- Constant changes in feed properties
- Limited real-time visibility on flotation circuit performance
- Limited feedback on how best to modify control variables for optimal grade and recovery

> Optimizing your flotation circuit achieves improved recovery at the desired grade, directly increasing net metal production

The IntelliSense.io Solution

IntelliSense.io's Flotation Optimization Application, powered by the IntelliSense.io brains.app platform, addresses these challenges directly:

1. **Predicts the impact of changes in material inputs** (ore mineralogy and PSD) on the flotation circuit performance (mass pulls, grade and recovery
2. **Delivers intelligence to the operators** about variables that directly influence the flotation grade and recovery, including:
   a. Each flotation cell's bubble size, gas hold-up and bubble surface area flux
   b. The mass pull and recovery of individual flotation cells & columns, and how they contribute to

the overall circuit performance

3. **Provides recommendations** for optimal set points and/or ranges of key control variables in the flotation circuit, including reagent dosages, air flow rates and pulp levels.

Providing operators and metallurgists with the information needed to proactively make changes to the flotation circuit to keep it stable and operating at optimum performance.

The IntelliSense.io Flotation Optimization application has been developed and refined over several years at multiple customer sites, creating an 'out-of-the-box' product that can be rapidly deployed to deliver value within weeks.

The Value Gained from Optimization

The IntelliSense Flotation Optimization Application will:

- **Increase the flotation circuit's metal recovery** at the desired grade, achieve and maintain the desired grade and recovery irrespective of upstream changes
- **Reduce inefficiencies** in the flotation circuit operation by highlighting underperforming cells/columns
- **Provides explicit operational guidance** on how exactly to operate each flotation cell/column, so the overall performance is optimized irrespective of shift

> The Flotation Optimization Application is an 'out-of-the-box' product that can be rapidly deployed to deliver value within weeks.

Mine to Market: Value Chain Optimization

Powered and connected together by the brains.app platform, the Flotation Optimization Application is one of a suite of real-time decision-making applications that uses Artificial Intelligence (AI) to optimize each process; from mine-to-market.

Our Material flow model connects these applications together to drive even greater efficiency gains.

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