

Frother analysis to increase plant performance

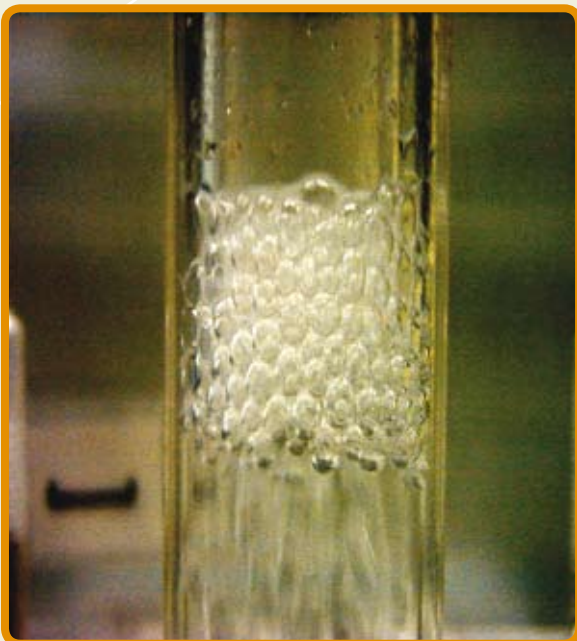
Techniques

JKTech has, over the years, developed a selection of laboratory equipment and techniques, specifically relating to bubble size and frother analysis, with equipment calibrated under standard conditions to ensure high reproducibility.

Not only is frother evaluation an increasing consideration in froth flotation it is also a major consideration in terms of residual frother in plant water and its effects on other plant areas.

These techniques allow the user to evaluate:

- The performance of various types of frother
- The Critical Coalescence Concentration of frothers
- Residual frother concentrations in plant streams
- The effect of dissolved solids and water quality on frother performance
- The effect of solids on frother performance



Methodologies

JKTech utilises a number of methods to characterise frothability and bubble coalescence.

Lederer Procedure

The Lederer Procedure defines a Foam Number as the volume of liquid transferred into foam per unit volume of gas. It is a dimensionless number used to compare the frothing capacity of different frothers and liquids under different operating conditions.

Padgett Method

Also of interest is the Padgett Method. This method uses a sintered glass filter pneumatic system where a known volume of liquid is aerated to determine the rate of foam collapse and the height of foam formed.



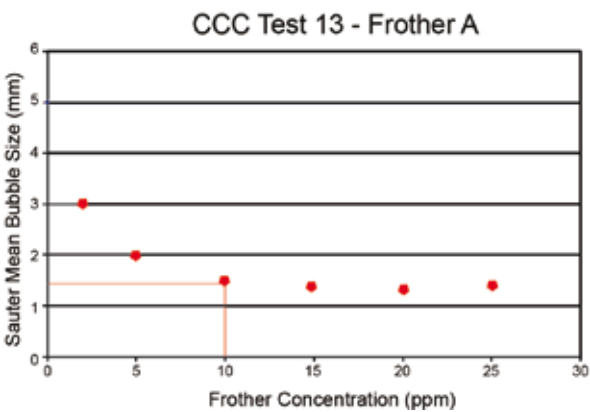
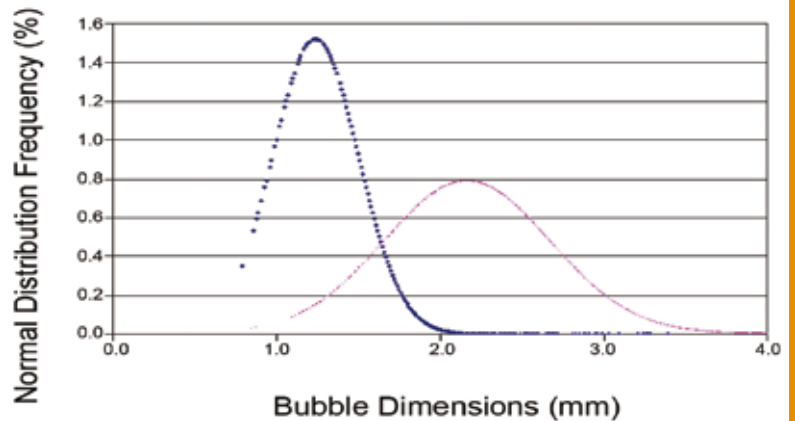
The Complete Frother Characterisation Solution

Bubble Size Analyser

As part of the AMIRA P9 project a bubble viewing device was developed by Jameson and Allum in 1984, to collect and image bubbles.

This approach has been progressively refined over the years, leading to the Bubble Size Analyser.

This is now commonly used for industrial bubble size analysis.



JKTech Batch Flotation Cell

The JKTech Batch Flotation Cell was initially designed for the high accuracy required in floatability modelling and flotation simulation.

It provides a reliable means of generating reproducible flotation test results. When provided with bubble sizing accessories it accurately determines scale up characteristics, providing detailed information on the effect of frothers on bubble size.

JKTech Can Perform:

- On site frother analysis
- Statistical analysis of frother site trials
- Frother comparison
- Optimum frother dosage determination
- Residual frother balances

Deliverables

- A comprehensive frother analysis report
- A fast turnaround on results and report
- Recommendations to improve frothability
- Frother testing equipment and training for operating sites to perform routine analyses
- Flotation Optimisation and related courses

Other JKTech Services

- Consulting (comminution, flotation, mine-to-mill)
- Quantitative Mineralogy (MLA and JKMineralogy)
- Specialist Software (JKSimMet, JKSimFloat, JKSimBlast)
- Metallurgical Laboratory Services
- Training Courses

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JKTech's range of technologies is supported by the ongoing research activities of the world renowned JKMRRC.

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