

Customer Case Study

Biomass Separation

Real-Time Phase Analysis Cuts Product Loss by more than **36%** and Boosted Consistency

Crystal Recovery

Batch Adaptation

Separation Efficiency

Process Control

The Challenge

A customer experienced inconsistent crystal recovery in their centrifuge decanter due to variations in biomass and crystal content between fermentation batches. Fixed decanter settings caused significant crystal losses, reducing yield and process efficiency. Optimizing settings for each batch was impractical, as it relied on slow, offline HPLC analysis.

The Approach

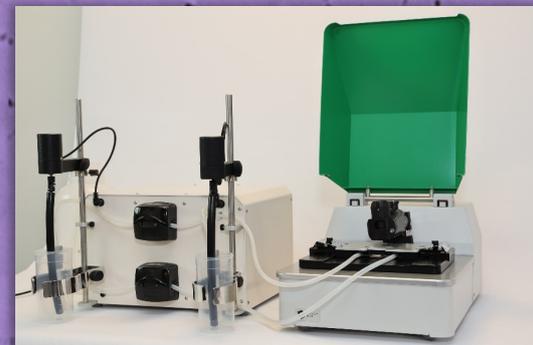
The ParticleTech Analyzer was used to precisely quantify the levels of crystal and biomass in both the light and heavy phases. Real-time composition data enabled operators to adjust centrifuge settings for each batch, achieving optimal separation despite biological variability.

The Implementation

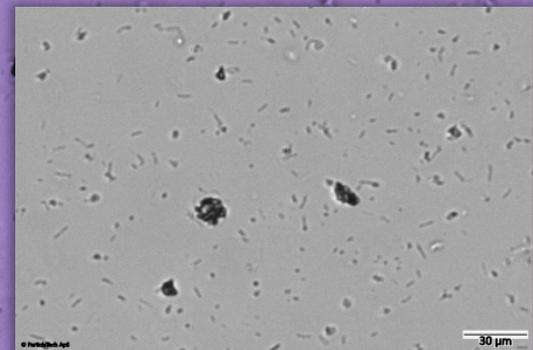
The analyzer was integrated into daily production workflows. Operators now continuously monitor phase composition and fine-tune centrifuge parameters to prevent crystal loss and maintain high recovery rates. Feed streams are also analyzed in advance to proactively configure the decanter for new batches.

The Result

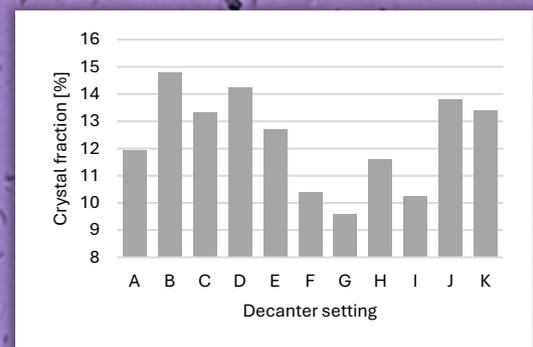
With real-time composition monitoring and adaptive control of centrifuge settings, the customer reduced crystal loss by more than 36% and has achieved consistent, high-yield separations across batches.



Particle Size Distribution



Crystal-Biomass Distinction



Crystal Fraction Optimization