

New Fast Measuring Method for Process Optimization of Sucrose Crystallization

Introduction and Background

The optical scanning of suspensions and image analysis were tested on magmas and massecuites in all steps of sucrose crystallization at Nordzucker. Image analysis is a fast method for measuring crystal size distribution for the optimization of the mean-crystal size.

Comparison to Sieve Analysis

In comparison to sieve analysis, results from image analysis have been proven to be reliable:

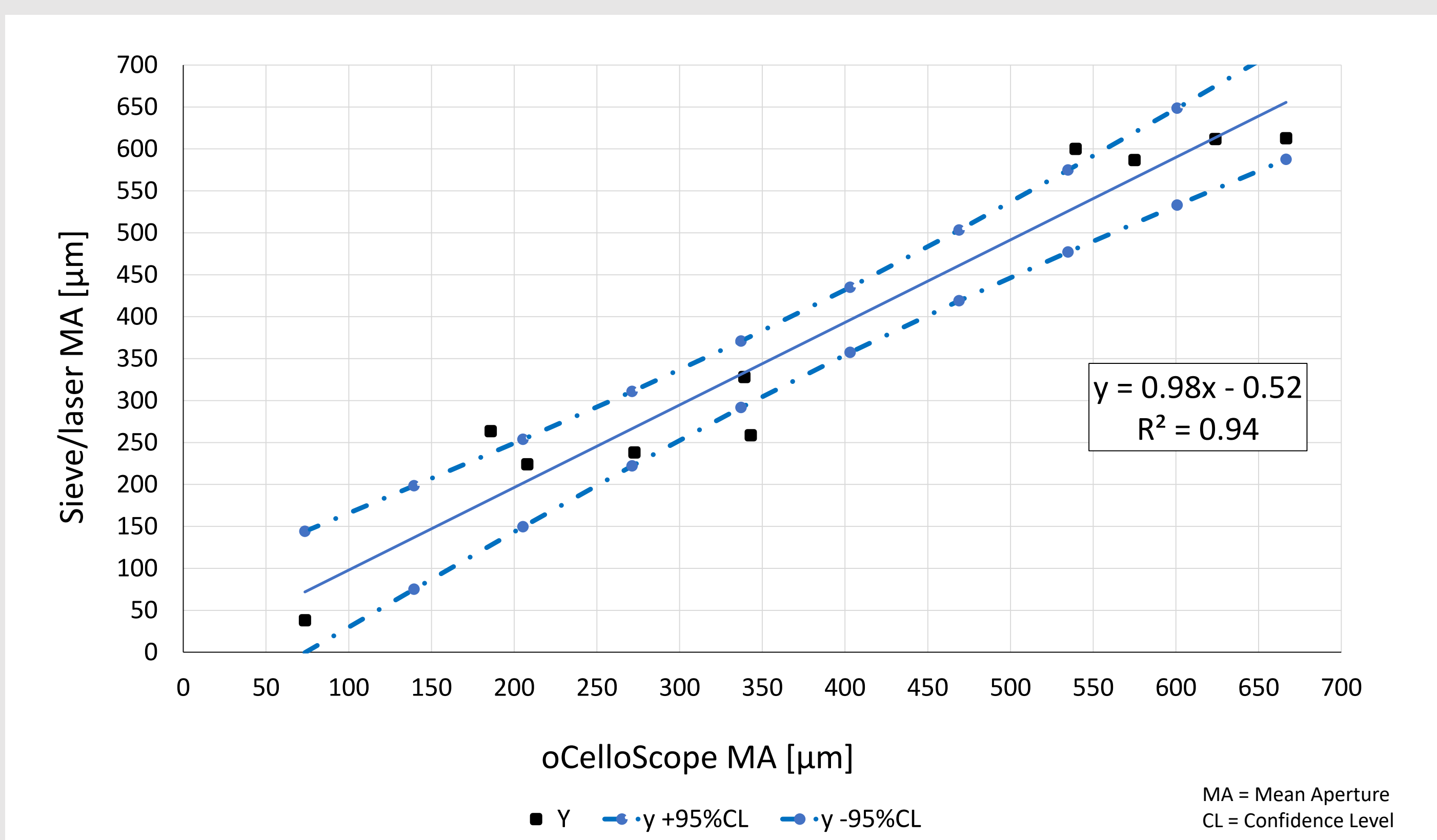


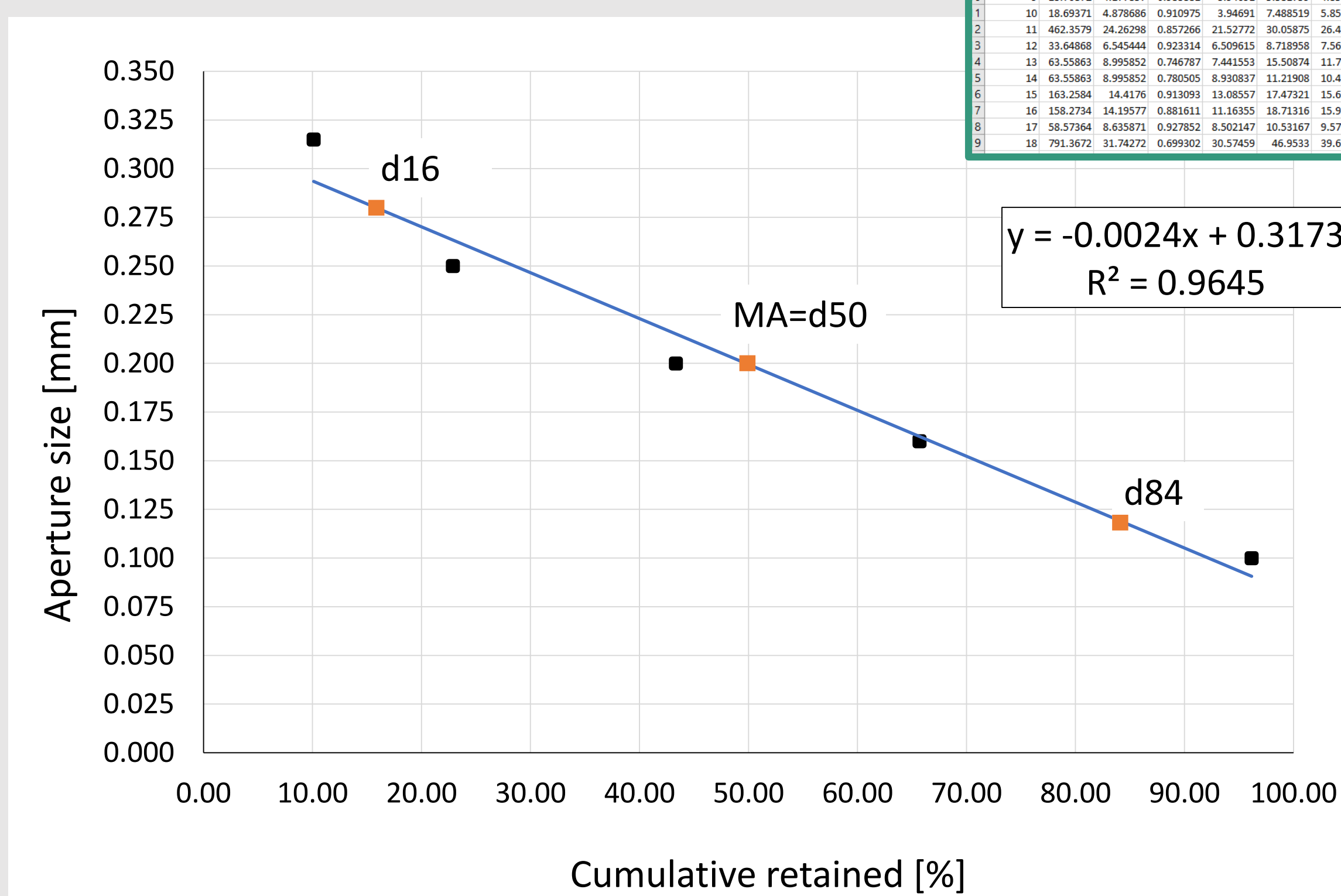
Image Analysis also provides:

Mean Aperture, MA, and Coefficient of Variation, CV%.

These are equivalent to the ICUMSA® standard methods:

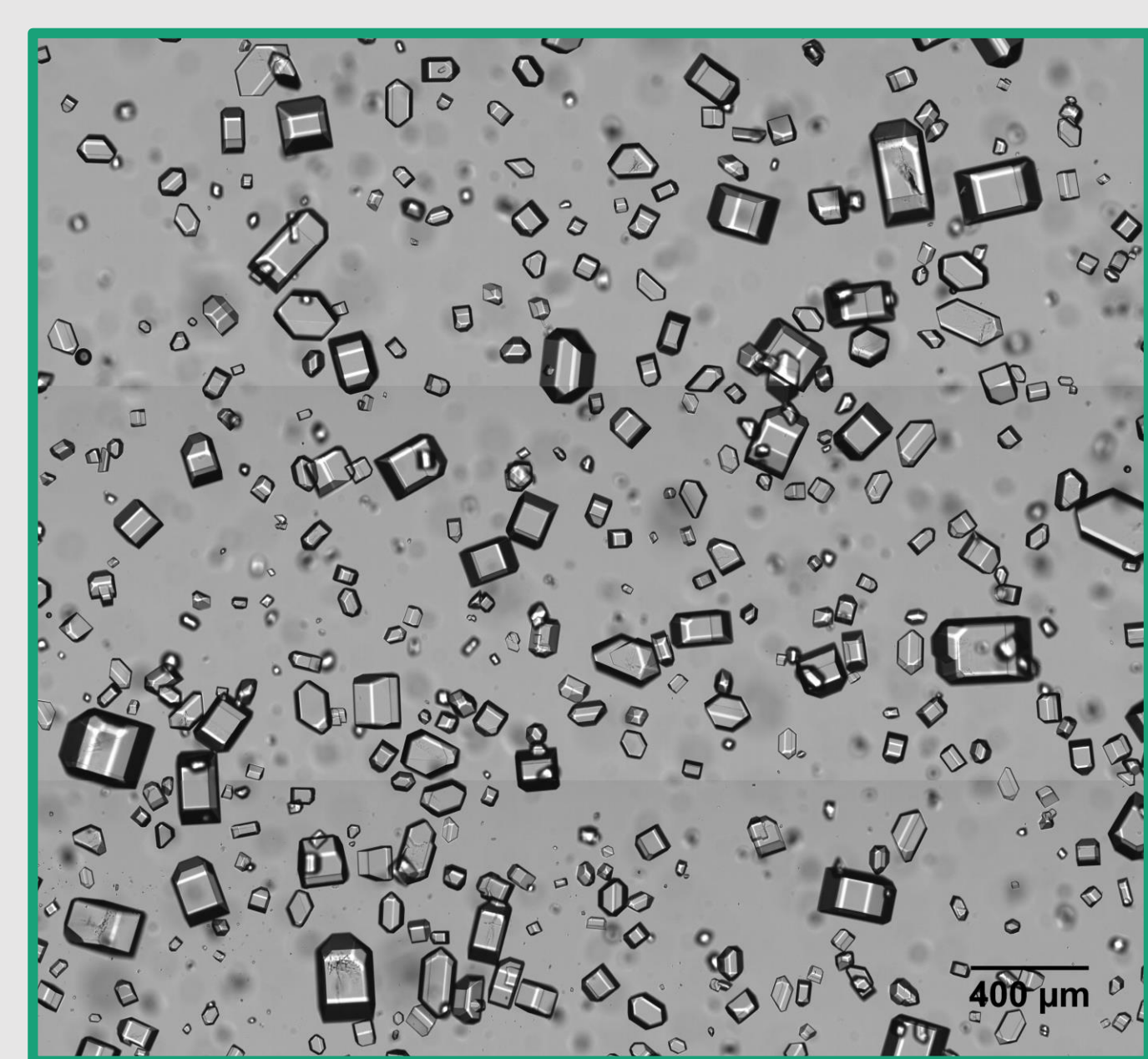
- Powers
- Rens
- RRSB
- Butler

Powers Method:

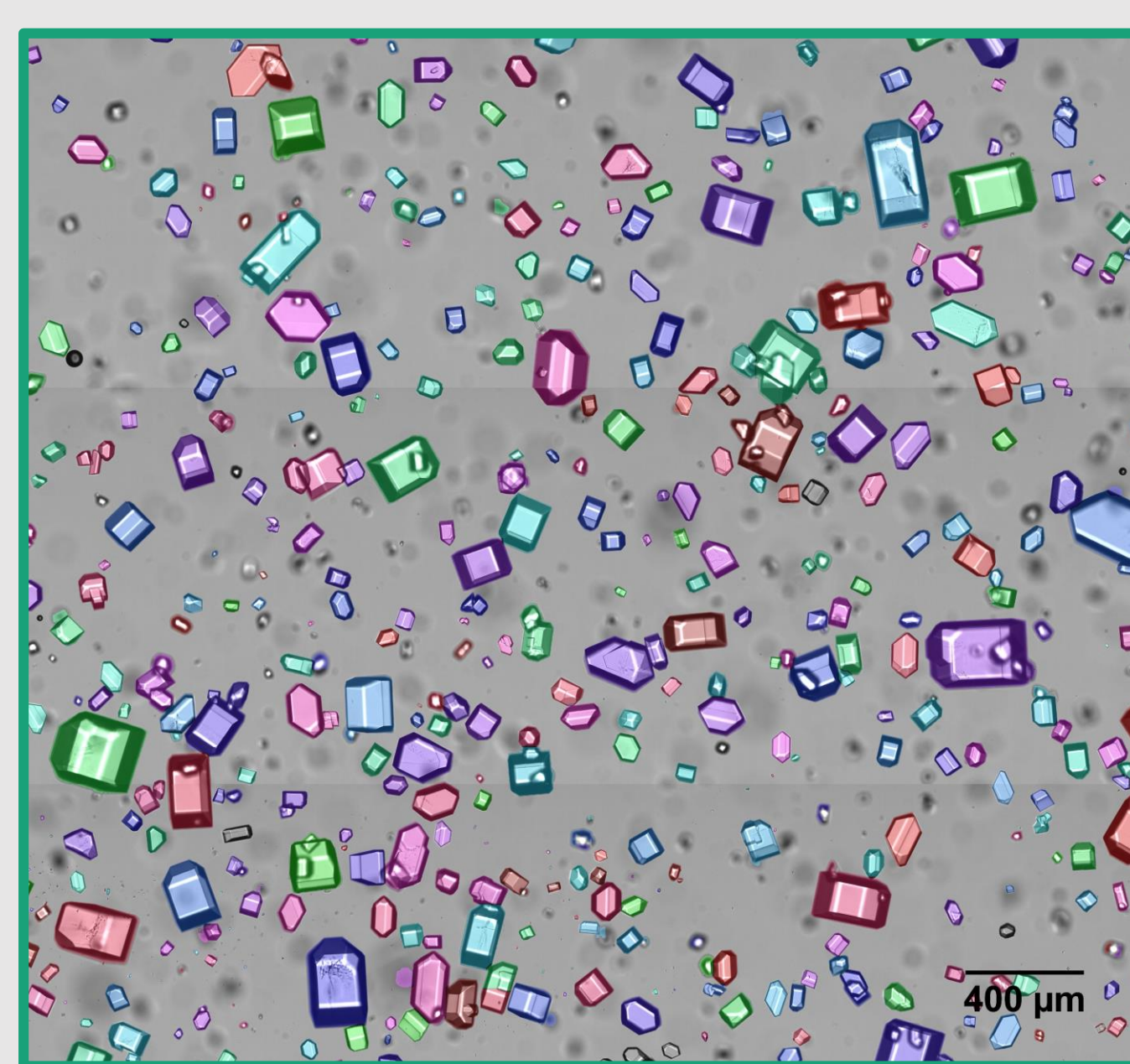


The ParticleTech Sugar Analyser

This method is about **60 times faster** than the conventional washing, drying, and sieving method. It provides **accurate data and results** and includes a valuable **visual tool** as well.



Best focus image

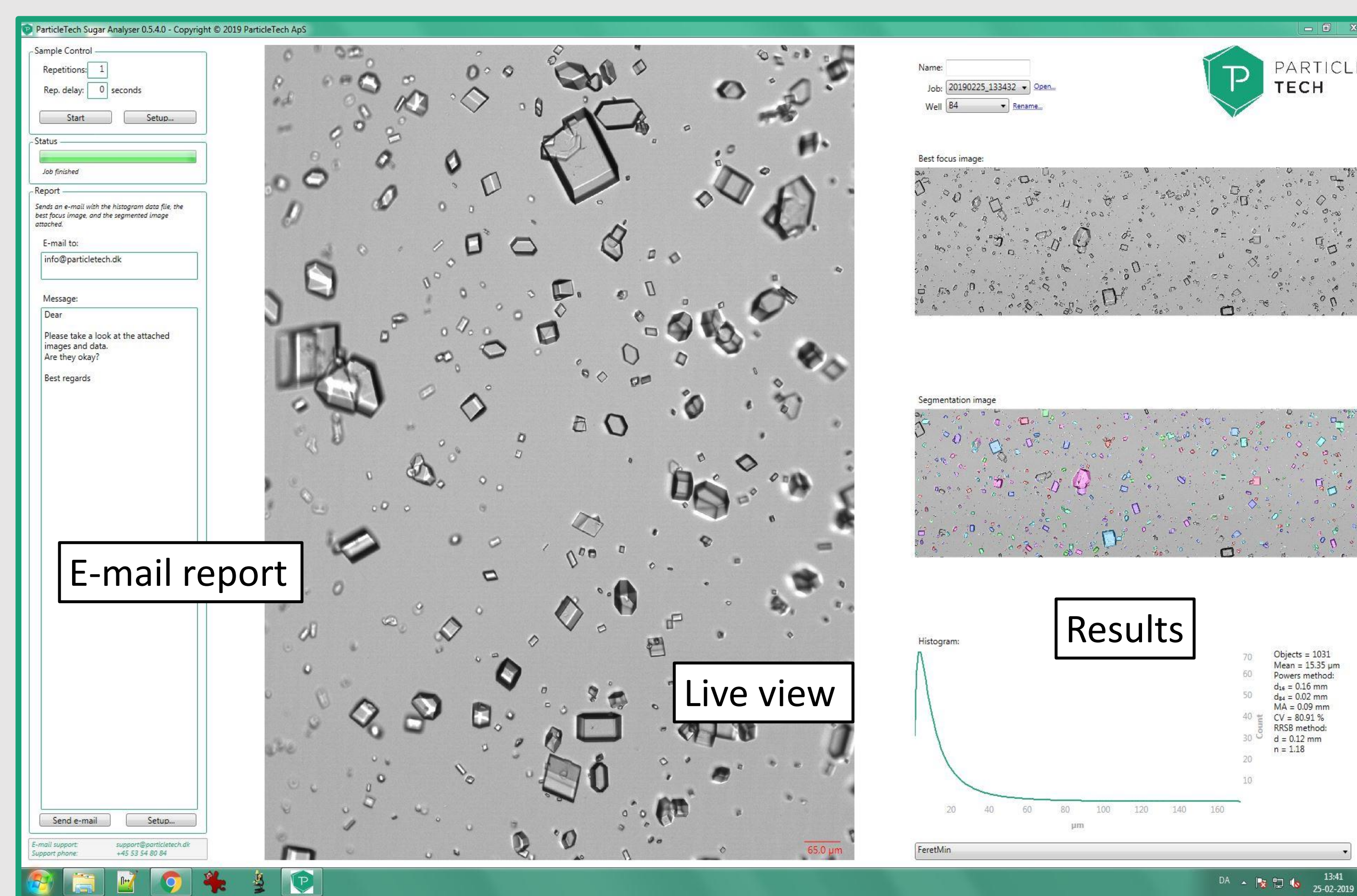


Segmented image

Data generation:

- Measured distributions of: Feret diameters (min, mean, etc.), area, circularity, EQPC, etc.
- The results provided are tailored according to needs.

The user friendly software generates results within **1-3 minutes** after a sample is prepared. The ParticleTech Sugar Analyser can be used on the production floor or in the lab.



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