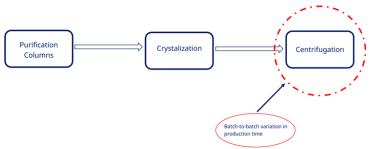


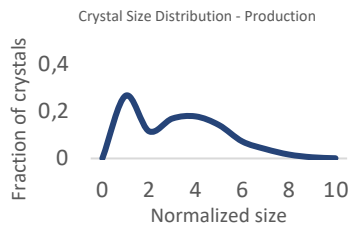
Insulin Production



Purification Plant



CSD in the production

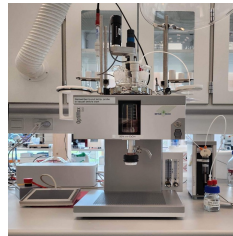


- Evaluate how process parameters affect the crystallization
- Propose strategies to improve the process

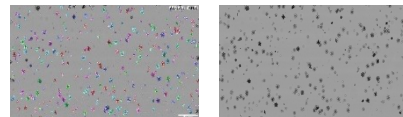
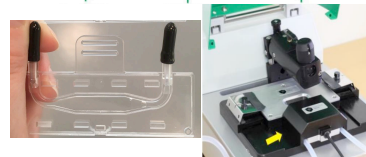
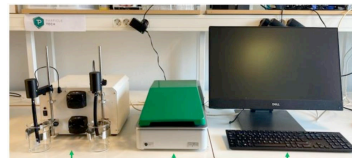
Methods

Experimental condition

pH – 1,2,3
 Standing time – 1,2,3
 Stirring mode – On/Off
OptMax 1001



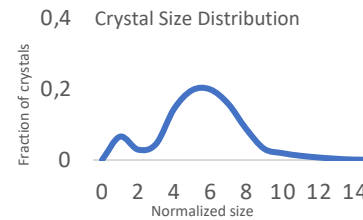
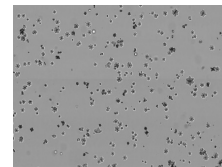
OcelloScope



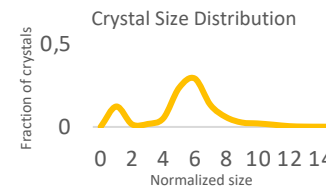
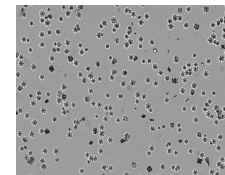
Results

Suggested strategies

pH 1 – Standing time 3 – Mixing On



pH 2 – Standing time 2 – Mixing Off



Perspective

- Test the strategy in large scale
- More analysis on production crystals and centrifuge
- Broad parameters research

HelixLab Experience

- Reality of industry daily life
- Good laboratory facility
- Kick-start the carrer in a Bio-Tech