

Project idea:

Evaluation of Morphology in Fungi Fermentations.

Background:

The project proposal consists of an "Evaluation of Morphology in Fungi Fermentations" using different measurements and technologies. During the fermentation process, salts, nutrients and metabolic components will change in concentration, as well as the morphology. These changes might be of interest, and investigation will be via elemental analysis, morphology evaluation using advanced microscopy (oCelloScope), viscosity probes and other yet not decided technologies.

A deeper understanding of the morphology change during the fermentation process, might lead to an even more balanced culture, resulting in a more cost effective and higher yielding process.

At the same time, the student will learn how the industrial fermentation is running, monitored and controlled. He/she will learn which parameters it could be interesting to measure at/on-line, and thereby get appropriate insight in the process.

The project scope will include all phases from investigation to tests, data acquisition, analysis and conclusions.

Suggested project content and milestones:

- Know and understand the fermentation process and the practical hands-on work in the fermentation plant
- Know current state of monitoring and controlling fermentations
- Test, document and report the use of different technologies, including data analysis as proof of concept
- Evaluate and/or identify at-line (or on-line) measurements to evaluate morphology, such as: Advanced microscopy (oCelloScope), On-Line Viscosity, Oxygen Transfer Rate, Biomass measured in laboratory, Biomass Probes (OD & Capacitance), Salt/elemental analysis, Evaluate the possibility of implementing the new technology in the fermentation plant, Implementation of process adjustments to evaluate and confirm the effect

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The present proposal from the company is an invitation to collaboration. The project will be planned, scoped and modified in close collaboration with the university supervisor and the master student, in order to get the best possible project. The formal application procedure (and application deadline) for a Helix Lab Fellowship must be followed. All applications will be evaluated by the Helix Lab Board before a Helix Lab Fellowship may be given. Read more on our web-site, Helixlab.dk