Chair of Bioseparation Engineering
TUM School of Engineering and Design
Technical University of Munich

BioSE

Bachelor's /Semester/Master's thesis

Kinetic study of fungal cell disruption

Keywords: Basidiomycetes | Kinetic | Protein| Polysaccharide

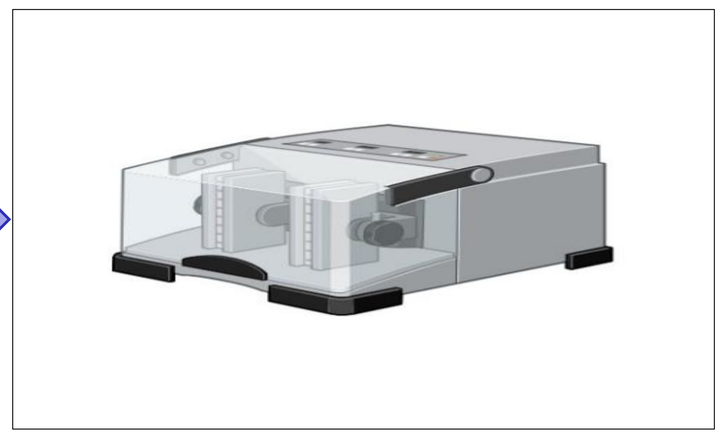
Project Description

Filamentous fungi in particularly basidiomycetes or wood rotting fungi are beneficial to humankind as they have a lot of biomolecules such as protein, polysaccharides which have different applications in food, the cosmetic industry and so on. The project aims to ferment these fungi sustainably, with a later focus on extracting and separating these biomolecules using novel and conventional methods

The focus of my project is on particularly lectins(protein) and β-glucans(polysaccharides) to extract and separate them from fungi using efficient downstream units such as (fractionation and chromatographic methods.

The part of the project here is to study the cell disruption of fungi with respect to the kinetic (time) behaviour for conventional and non conventional cell disruption method

Fermentation



Downstream

Time based analaysis

Research Objective

1. To study the effect of different parameters of cell disruption on fungal cells
2. Studying the kinetics based equation for the different method
3. Developing/Analysing the cell disruption equation for fungi

Profile

- Structured and independent work
- Motivation to work as a team/ willing to learn
- Master/Bachelor student in chemical engineering, biotechnology (IBT, MBT), biochemistry, chemistry, microbiology, or similar
- **Start date**: as soon as possible
- Language: English
- Ideal, but not required: Lab experience

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