

Master thesis project at Chalmers University of Technology, Division of Industrial Biotechnology, Department of Biology and Biological Engineering

Milk protein production in yeast

Duration: 6-12 months (30 or 60 hp).

Preferred starting time: September 2020 or January 2021

Contact persons:

Elena Cámara (elenaca@chalmers.se)

Yvonne Nygård (yvonne.nygard@chalmers.se)



Anthropogenic climate change is a major societal challenge of our time. A key aspect of the challenge concerns the future of food production and consumption, and the global agro-food system is estimated to account for about 30% of global greenhouse gas emissions. Sustainable production of protein from biomass is a crucial step towards a climate-neutral society capable of feeding the growing population.

In our group, we develop new industrial strains for production of various bioproducts (fuels, biochemicals and proteins), using **CRISPR/Cas9 technologies** for strain engineering. We work with different (industrial) yeast strains, in this project the production host will be the yeast *Pichia pastoris*. We also work on **developing bioprocesses**, e.g. production processes where the microorganisms grow in bioreactors and produce the bioproducts.

The student will in this project have the chance to work both with strain engineering, for developing more efficient protein production hosts and with fermentations; producing the protein in a bioreactor. The work may also involve protein purification through column chromatography and performing protein activity assays. The focus of the MSc project will be determined at the start, according to the student's interests and the progress of the project.

Applicants should have a background in **biotechnology/ microbiology / molecular biology / synthetic biology** or related fields. Previous experience in running a bioreactor is advantageous but not a requirement.

If you are interested or have any questions, contact us!