

Industrial biotechnology, bioinspired chemical production

Supervisor: Prof. Paula Jouhten

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We are now looking for a **Doctoral Researcher in field of computational and synthetic biology**.

Are you looking for to contribute to creating a sustainable future?

We are now looking for a doctoral researcher to Microbial Physiology group at Aalto University's Department of Bioproducts and Biosystems. In this position you will have a chance to make an impact by developing microbial cells into biotechnological production hosts to replace oil-based chemical synthesis. Join us in shaping the future!

In this position you will be able to learn to integrate state-of-the-art computational and experimental methods for developing novel biotechnological production hosts.

Scientific environment

The work will be done at the excellent facilities at Aalto University, School of Chemical Engineering (<http://www.bioeconomyinfra.fi>). The laboratories are situated on the main campus of Aalto University in Otaniemi (short metro-ride from Helsinki) within [the Department of Bioproducts and Biosystems](#). [The Department of Bioproducts and Biosystems](#) (BIO2), one of three departments in the School of Chemical Engineering at Aalto University, that has an internationally leading reputation in basic and applied research for the development of advanced materials from natural resources. It is one of Europe's leading research and higher education institutions in the field of sustainable chemistry and engineering based on the utilization of renewable resources.

BIO2 aims to contribute to the development of novel solutions to move towards sustainable primary production and processing systems that can produce materials with fewer inputs, less environmental impact, and reduced greenhouse gas emissions. Within bioscience, the department has research in bioprocess technology, molecular biotechnology, enzyme technology, metabolic engineering, synthetic biology, biomolecular, and biohybrid materials. Other strengths of the department include sustainable materials and products based on lignocellulose, ranging from nanomaterials to novel cellulose-based textiles.

You will be working with an international group of friendly colleagues led by Prof. Paula Jouhten.

In the first weeks, you will be assigned your own onboarding buddy who will help you get started with your work and studies at Aalto.

Your role and goals

You will be performing computational design of strain engineering, implementation of the designs using synthetic biology tools, and characterization of the strains. You will be working on these tasks together with your colleagues in an interdisciplinary team and we expect you to contribute positively to the research group dynamics. The outcomes of the research you will be disseminating as oral and poster presentations in conferences and as scientific publications.

Your experience and ambitions

The candidate is expected to have:

- Solid understanding of molecular biology and/or microbiology
- Some background in programming and/or data science
- Learning and performing both lab- and computational work
- Ability and interest to work smoothly and results-oriented in an interdisciplinary team
- High self-motivation and persistence in tackling challenging scientific problems
- Good written and oral communication skills in English

An applicant must have completed by 31 July 2024 or preferably earlier (to start employment on 1 August 2024) or by 31 December 2024 or preferably earlier (to start employment on 1 January 2025)

- a master's degree awarded by a university, or
- a study programme that in the awarding country gives eligibility for doctoral level studies

in the field of computational biology, biotechnology, synthetic biology, or a closely related field. A good command of English is required, Finnish language is not.