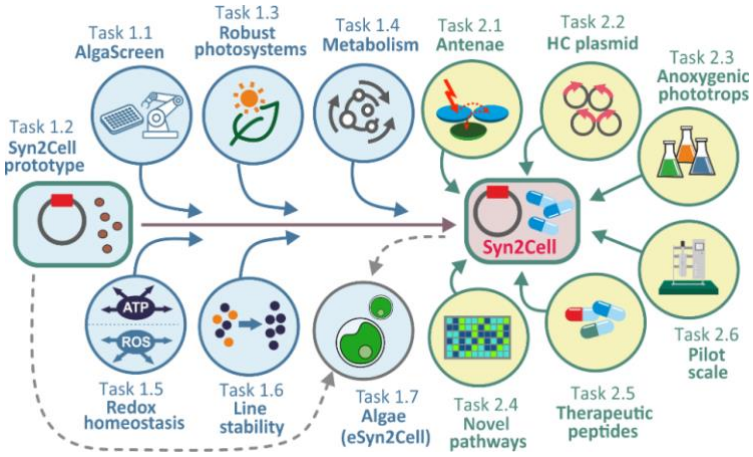
Join our team: PhD position available in the "PHOTOMACHINES" PROJECT

Join our new institutional project *"**PHOTOMACHINES – Photosynthetic cell redesign for high yields of therapeutic peptides"*** (launched January 1st, 2024)! We are looking for a motivated student to join the laboratory for Algal Ecophysiology at Centre Algatech of the Institute of Microbiology CAS in Trebon, Czechia. The PhD project will focus on **The Role of Cell-to-cell Heterogeneity in Algal Biotechnology.**

THE PROJECT

This is an interdisciplinary project combining basic and applied science that aims to develop a productive 'biofactory' through genetic manipulation of cyanobacteria. In recent years, an increasing number of studies has shown that individual cells in laboratory cultures of microbes can differ from each other both genetically and in their phenotype. Focusing on the role of phenotypic heterogeneity in cultivation of phototrophs for biotechnological applications, the task of our team in this project (Task 1.6 Line stability) is to quantify cell-to-cell heterogeneity, understand the factors that promote it and develop a workflow for sorting and automated characterization of individual cells that can then be implemented in an automated 'breeding' approach based on Adaptive Laboratory Evolution.



The selected candidates will apply flow cytometry, cell sorting, confocal microscopy and other imaging techniques such as nanoSIMS, FISH, and Raman spectroscopy as well as -omics approaches to advance our understanding of the phenomenon of cell-to-cell heterogeneity.

REQUIRED QUALIFICATIONS

- A BSc/MSc with a focus on Molecular Biology, Microbiology, Plant Physiology, or related fields
- A profound interest in the physiology of microalgae and in method development of single-cell techniques
- Experience in cultivation and experimental work with microalgae as well as flow cytometry, confocal microscopy or other imaging techniques are of advantage.
- Proficiency in data analysis and image processing are further benefits.
- We seek a candidate with good communication skills, who is self-motivated and able to work independently as well as in a team.

WHAT WE OFFER

- Work in a friendly international team focused on the molecular biology, ecophysiology and biophysics of photosynthesis, located at an internationally recognized center for basic and applied research on microalgae and bacteria (currently >80 employees)
- Interaction with the interdisciplinary project consortium of several institutes across Czech Republic, Europe and Japan with expertise in genetics and molecular biology, analytical chemistry, bioinformatics, biotechnology, synthetic and structural biology, robotics and artificial intelligence

- Plentiful leaning opportunities concerning new methods, access to cutting-edge technology (microscopy, mass spectrometry etc.)
- Fully funded PhD position (4 years, subject to satisfactory progress during initial trial period)
- Enrollment at the University of South Bohemia, Ceske Budejovice (Physiology and Developmental Biology PhD program) provides opportunities for scientific and soft skill training, support for stays abroad and more. We also offer assistance with the administrative aspects of moving to the Czech Republic and accommodation for the first months.
- Třeboň is a small town set in a tranquil and invigorating environment located in the south of the Czech Republic close to the Austrian border, in a rural setting about 2 h from Prague and 30 min from Ceske Budejovice, surrounded by UNESCO-protected lake-land area and forests as well as historical towns.
- Start date at the earliest convenience, preferably April 2024

HOW TO APPLY

Submit a single pdf with a letter of motivation (max 2 pages) describing previous experience relevant to the project and research interests, as well as a CV including any publications and contact information for 2 references before February 20th, 2024 to eichner@alga.cz. Online or in-person interviews will be scheduled for the end of February.

For more detailed information or questions on the project feel free to contact the PhD project supervisor Dr. Meri Eichner (eichner@alga.cz).

The Lab: https://www.alga.cz/en/c-285-ondrej-prasil-s-group.html, https://www.alga.cz/en/c-287-radek-kana-s-group.html
The project: https://www.alga.cz/en/c-968-photomachines.html