

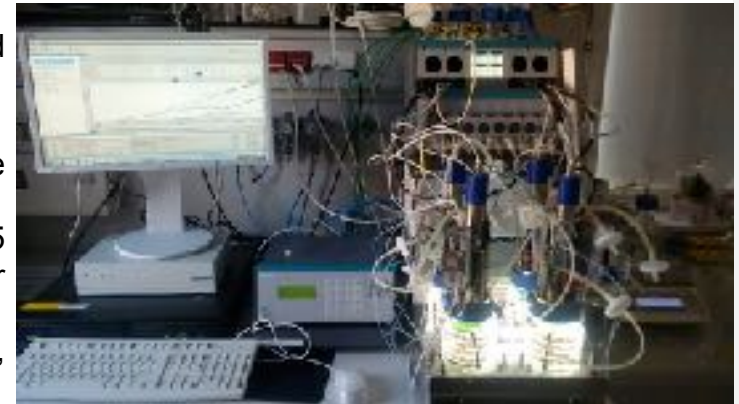
Motivation and Goals:

- Polyhydroxyalkanoates (PHAs) are storage compounds and raw material for biodegradable plastics. Currently PHAs are synthesized by heterotrophic bacteria using sugar fermentation. The relative high cost of raw materials for the processing makes PHA expensive in comparison to other petroleum-derived plastics.
- It is known that certain oxygenic cyanobacteria can accumulate PHAs photoautotrophically from CO₂ and sunlight. In this project we have screened for cyanobacterial strains which can naturally accumulate PHAs under nutrient limiting conditions. However, the growth rate and the PHA yield still remains low.
- This project aims to develop a bioprocess to enhance biomass growth and PHA productivity for production of PHAs.



Opportunities:

- Within the scope of this project you will carry out experiments to improve existing wild type strains using random mutagenesis.
- Later you will cultivate the improved strains with high PHA content in 0,25 and 1 liter photobioreactors to compare mutated and wild type strains for growth and PHA productivity.
- PHA production will be determined by analytical methods including HPLC, flow cytometry and microscopy.
- Media optimization will be done using ramp experiments to achieve N/P limitation and to avoid starvation



Requirements:

- You are studying biotechnology, process engineering or similar disciplines. You are motivated and team-oriented.

Dates:

This work could start in June 2017 and is scheduled for 6 months.

Please contact:

Project assis. Donya Kamravamanesh
 TU,Wien, Institute of Chemical Engineering
 Research Division Biochemical Engineering
 Gumpendorfer strasse 1a/ 166-4
 Email: donya.kamravamanesh@tuwien.ac.at