

### Topic and aim

High emissions of greenhouse gases such as CO<sub>2</sub> force the industry to take action. One option to solve this problem is the utilization of acetogens, a group of microorganisms that have the capability to utilize CO<sub>2</sub> as a source for biomass growth and metabolite formation. In this thesis, focus should be laid on CO<sub>2</sub> fixation with the acetogenic microorganism *Acetobacterium woodii* and the combination with organic substrates as electron donors. Additionally, real flue gas streams from industrial partner should be used. Knowledge should be gained by investigation of different process parameters in a chemostat cultivation.

### Responsibilities

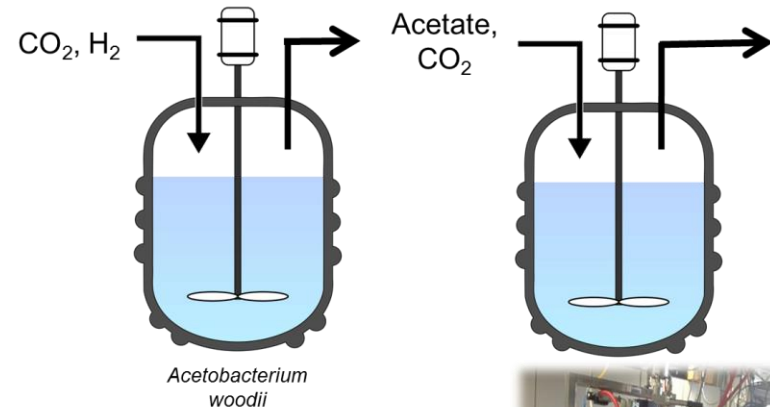
You will be carrying out anaerobic cultivations in serum bottles and a bioreactor (10 l) as well as a parallel bioreactor system (200 ml). The main focus will lay on chemostat cultivations and the variation of different process parameters (such as partial pressures and media components). The cultivation procedures also include anaerobic media preparation, process execution and control, sample taking, product analysis of cultures with HPLC as well as broad evaluation of the obtained data. A small compensation (€ 1800 = 6 x €300) for the work is possible.

### Requirements

You are studying bioprocess engineering, biotechnology or similar. Previous experience with cultivations in bioreactors is implied and background knowledge about the parameters of a bioprocess is an advantage. In addition, you should have an affinity to address technical problems in the lab. Moreover, you are team-oriented, motivated with a can-do-attitude and scientifically curious.

### Dates

This work can be started immediately and is scheduled for 6 months.



Please contact:

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