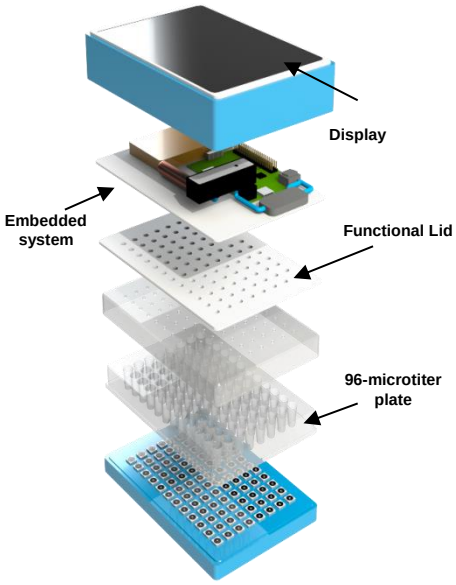
Aushang: 25.10.2017

Master / Bachelor student

Biology, Biomedical Engineering, Physics

Validation of an autonomous microbioreactor for cell line development based on a functional lid microfluidic platform

In the biopharmaceutical industry, cell line development (CLD) for the production of therapeutic proteins primarily pursues a high production yield and product quality. A typical process flow of cell line screening is from the selection of suitable cell lines in micro titer plate (MTP) to large bioreactors. However, the whole process may take up to one year. A well-developed, miniaturized and highly-parallel microbioreactor could reduce the processing time as well as the amount of cells and media consumption to make the evaluation more efficient.



In our group, we have developed an integrated microbioreactor (MBR) based on a disposable functional lid (FL) and a standard MTP, which only requires one pressure source for parallel and reciprocal mixing of cells cultured in suspension in the MTP as an enabling feature for miniaturized cell culture in pharmaceutical CLD.

As a student research assistant you will be monitoring cell proliferation, which culture in our developed FL MBR, and comparing results with standard cell culture in a stable MTP and shaking platform by viable cell density (VCD).

You will be working on the following topics:

- Monitoring cell proliferation (VCD) under different culture platform. Development of a proliferation assay
- Exploring different experimental settings in regard of different structure of FL and different mixing conditions in the MBR.
- Data analysis and interpretation.

The eligible candidate should be interested in experimental work in cell culture and application science. Working language will be in English.
For further information please do not hesitate to contact me:

Cheng-Han Tsai
IMTEK – Universität Freiburg
Georges-Koehler-Allee 103 HSG (EG)
D-79110 Freiburg

Phone: +49 761 203-98734
E-Mail: Cheng-Han.Tsai@imtek.uni-freiburg.de