

Impedance Cytometry for picking electrogenic microorganisms

Description

The role of electrogenic gut microorganisms in the human intestinal microbiome is not yet fully understood, and available screening methods today are time-consuming, have limited sample throughputs and low detection rates. Therefore, developing a micro-fabricated high-throughput bioelectrochemical flow cytometer detecting gut bacteria is needed.

The aim of this project is to extract the signal related to particles from the noisy signal with the help of a lock-in amplifier. So a basic knowledge of electronic would be an advantage. The second step after the detection would be an impedance spectroscopy using the same device. During the time-period of this HiWi position you will work with pre-fabricated microfluidics system and the lock-in amplifier to find the parameter which the goals can be obtained.

Fields of activity

- Reviewing literature
- Working with a microfluidics setup
- Extracting the related signal through the noisy signal
- Perform an impedance spectroscopy experiment

Requirements

- Fluent English
- Basic knowledge of electronic
- Motivation and enthusiasm to work with signals!

Start: By arrangement
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