Technische Universität Braunschweig

Bachelor-, Student-, Master thesis

pvz Zentrum für Pharmaverfahrenstechnik

Institut für Mikrotechnik

Neuron Sensor – Part I
Microelectrode array for extracellular activities recording

Description

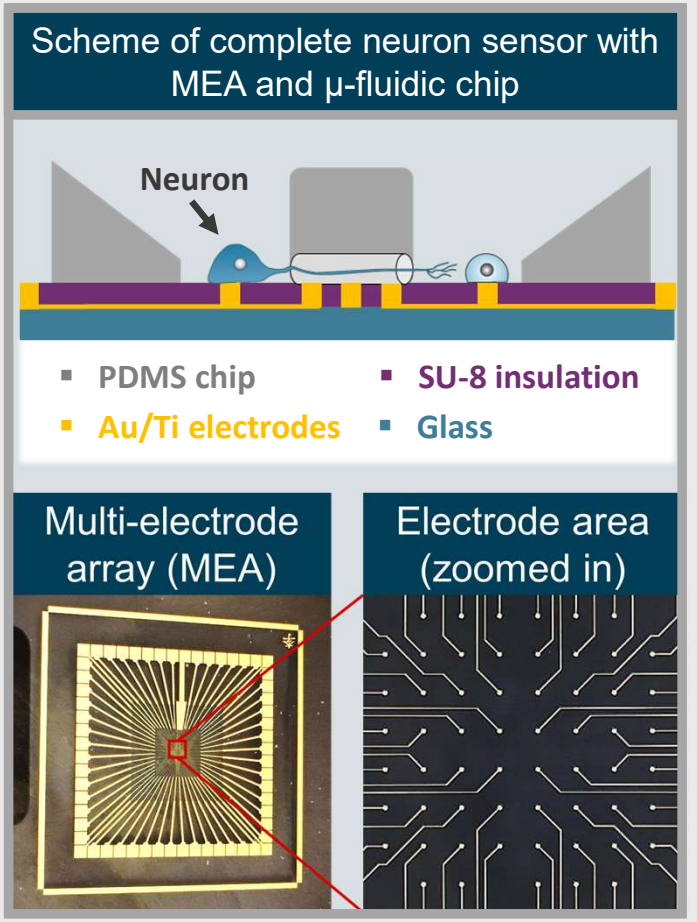
This work is part of the Homeo Brain project. The goal is to develop a **microelectrode array (MEA)** for extracellular recording of neuronal activity. The MEA is a thin chip mounted on a head stage and connected to a computer to measure action potentials and perform various data analyses. The student must be familiar with **AutoCAD** to construct the MEA. It would be ideal if the student had previous experience in micro- and nano-fabrication. In our project, we need to fabricate electrodes that are arranged to fit perfectly into our custom microfluidic chambers. Right now we have 60 electrodes arranged in a square. Later, the pattern will be changed without affecting the performance. The microelectrodes are fabricated by **photolithography**, **sputtering** and **etching**. The process will take place in IMT's clean room. Students with clean room experience are preferred.

Fields of activity

- Literature research of microelectrodes fabrication.
- Fabrication of microelectrodes in the clean room.
- Characterization of the fabricated microelectrodes.
- Documentation of results.

Requirements

- Interested in microfabrication and/or relevant experience.



Start: By arrangement
Contact: **Victor Krajka**
Phone: 0531 391-65676
v.krajka@tu-braunschweig.de

Institute of Microtechnology | Alte Salzdahlumer Str. 203 | 38124 Braunschweig

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