Technische Universität Braunschweig

Bachelor- / Student- / Master thesis / HiWi

pvz Zentrum für Pharmaverfahrenstechnik

Institut für Mikrotechnik

Neuron Sensor - Microelectrode array for extracelluar activities recording

Description

This work is a part of the Homeo-Hirn project. It aims to develop Microelectrode array (MEA) for extracelluar neuro activity recording. The MEA is a fine chip mounted in a MEA head stage, which will be controlled through computer for action potential measurement and various data analyses. The student has to be good at AutoCAD so as to be able to implement the MEA design. It would be ideal if the student has already acquired some experience in micro- and nanofabrication.

In our project, we need to fabricate electrodes arranged in such a way that it fits perfect with our customized microfluidic chambers. For the moment, there are 60 electrodes arranged in square pattern. Later on, the pattern has to be changed without comprising its performance. The microelectrodes will be fabricated using photolithography, sputtering, and etching techniques. The process will be taken place in IMT clean room. Student who has experience in clean room is 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.

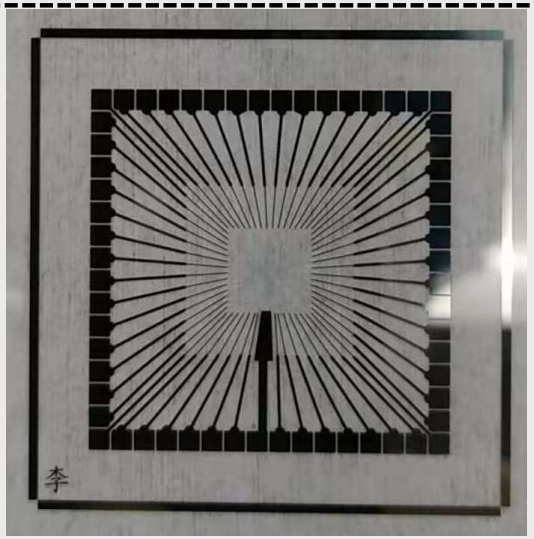

figure 1 overall view of the MEA chip

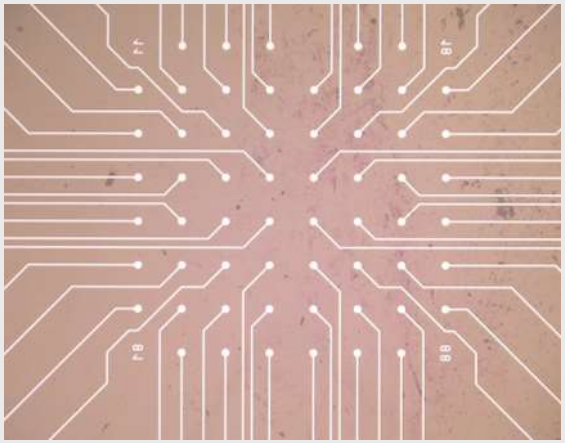

figure 2 microelectrodes in square pattern

Start: By arrangement

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