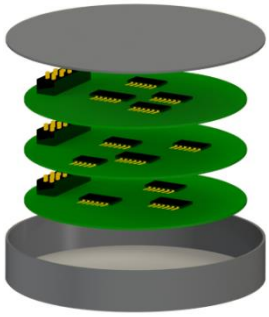
Study Project Topic

Miniaturization and integration of wireless neural signal recording module

Introduction



Optogenetics enables targeted excitation or inhibition of neurons via light with higher spatiotemporal resolution than electrical stimulation. When combined with recording electrodes, this technology enables the precise investigation of specific neuronal populations.

The EIC Pathfinder project Move2Treat (https://move2treat.org/) focuses on the development of soft, multifunctional, fiber-based neural devices for the brain and spinal cord. We are seeking a motivated student to help us bridge the gap between the lab and the living organism by miniaturizing a wireless recording module for animal studies.

Objectives

Miniaturization of a wireless module for neural signal recording and data transmission

Your tasks

- PCB layout design for module miniaturization (flex PCBs, stacking strategies, etc.)
- Assembly and troubleshooting of the electronics
- Evaluate and test the functionality of the miniaturized system
- Design and 3D-print an enclosure for optimal integration of the electronics
- Documentation and writing a report

Your profile

- Interest in neurotechnology
- Background in electrical engineering or similar
- Practical experience with PCB design and circuit troubleshooting
- Experience or interest in learning CAD (e.g., SolidWorks)
- Creative, independent working style with the ability to adapt to challenges

Logistics

- Location: Institute for Machine-Brain Interfacing Technology (IMBIT)
- Earliest start date: October 15, 2026 (can be discussed)
- Duration: 3 – 6 months

Contact

Emilija Boštogaitė, M.Sc.

Laboratory for Biomedical Microtechnology
Department for Microsystems Engineering – IMTEK
IMBIT // NeuroProbes

University of Freiburg
Georges-Köhler-Allee 201 (Room 01.026)
79110 Freiburg

emilija.bostogaite@imtek.uni-freiburg.de
www.imtek.de/bmt

Universität Freiburg
IMBIT //
Intelligent Machine-Brain Interfacing Technology

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