

The Department of Microsystems Engineering (IMTEK) at the University of Freiburg has a new opportunity for a PhD student in microsystems engineering starting on March 1st, 2023.

PhD position TV-L E13, 85%

The position is available in the **Neural Implant Group** lead by Dr. Patrick Ruther at the **Microsystem Materials Laboratory** (Prof. Oliver Paul, <https://www.imtek.uni-freiburg.de/professuren/materialien>) and will be tied to the new multi-partner European HORIZON-EIC-2022-PATHFINDEROPEN project **NAP (twiN-on-a-chip brAins for monitoring individual sleep habits)**. In NAP we will work in an international team to study individual sleep pathophysiology through a new science-to-technology paradigm merging in vitro modelling, allometric scaling, signal processing and micromanufacturing. We will use MEMS technologies to realize high-density microelectrode arrays to electrically interface brain organoids to study the early symptoms of Parkinson's disease.

As a PhD student your role will be to develop refined microfabrication methods for a high-channel-count bioelectronic interface and its integration into microfluidic subsystems. The final project outcome should be a research tool for long-term sustained electrophysiological recordings from brain organoids.

For the project we are looking for a PhD student with the following profile:

- A degree in microsystems engineering, electrical engineering, biomedical engineering or similar.
- Motivation to work in an interdisciplinary project team. In NAP, the partners come from neuroscience, in vitro biotechnologies, microsystems engineering and sleep analysis; the ability to communicate across disciplines is vital.
- A genuine interest in experimental work and engineering. Previous experience of practical work in the area of microsystems engineering is desirable but not essential.

As we are an international project team, good communication skills in English are required, as well as willingness to travel to visit the European partner labs and to present the work at international conferences. In addition to research, you will be actively involved in preparing annual progress reports and support in project management and meetings. The project runs over 4 1/2 years starting March 1st 2023.

What we offer is an excellent environment for developing expertise in the exciting field of Bioelectronic Engineering and Brain-Machine Interfaces. Freiburg is right in the heart of the Black Forest region of southern Germany. The Department of Microsystems Engineering (IMTEK: <https://www.imtek.uni-freiburg.de>) is a well-known center for Neurotechnology, which also is one of the profile fields of the University of Freiburg. We are closely linked to the BrainLinks-BrainTools Center at IMBIT (<https://www.brainlinks-braintools.uni-freiburg.de/de/imbit/>).

If this position fits your interest, please send your application as soon as possible via email (PDF, max. 5 MB) to ruther@imtek.uni-freiburg.de or via post to

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All questions regarding the position can also be sent to the e-mail above. In your application please include the following:

- Your CV
- Copy of degree certificates
- A motivation letter describing briefly why you think you are an excellent match for this PhD position.