

## PhD thesis opportunity

# Development of an implantable energy autonomous wireless transceiver for neural applications



This project is part of the BrainLinks-BrainTools cluster of excellence (<http://www.brainlinks-braintools.uni-freiburg.de>) and aims to develop an energy autonomous telemetry unit for implantable neural probes. The telemetry unit serves as a bi-directional communication link and as the power supply of the implanted system. The project is being carried out in cooperation with the Microelectronics and Electrical Instrumentation Laboratories. The work in this thesis project will focus on modeling and optimizing the inductively-coupled system, developing strategies for fabrication and packaging of the components, carrying out the fabrication and integration, and verifying the long-term stable operation of the final product.

The ideal candidate will have a strong background in electrical engineering, physics or similar. Preferred qualifications include strong familiarity with one or more of the following topics: electromagnetics, radio propagation and antenna design, analog and RF electronics, microsystems design, and/or microfabrication. This is a highly interdisciplinary project with many team members and so excellent written and verbal communication skills are a must as is the ability to work within a large team.

The position is initially offered for one year (70% TV-L E13 for first year and increases thereafter) and can be extended up to 3 years after successful annual evaluation of the project. To apply please send as a single pdf your cover letter, CV, certificates and transcripts (bachelor and master), and 2 recommendation letters to [tzeno.galchev@imtek.de](mailto:tzeno.galchev@imtek.de). Position is open until filled.

Microsystem Materials Laboratory  
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