Master’s Thesis "Mechanical Activation Pathways in Brain Tissue Using Magnetic Nanomaterials"

Naturwissenschaftliche Fakultät, Erlangen, Full time, Temporary employment, Bewerbungsschluss: 29.05.2026

Your Workplace

Master’s Thesis Opportunity (Starting June 2026)

Mechanical Activation Pathways in Brain Tissue Using Magnetic Nanomaterials

We are offering an exciting Master’s thesis project for a motivated student interested in neuroscience, biomaterials, and translational research. The project will investigate activation pathways in brain tissue and the biocompatibility of magnetic nanomaterials in a neuromodulation-related context.

Starting in June 2026 (latest), the work will involve the use of organotypic brain slice cultures, tumor cell injections, fluorescence-based assays, and histological analyses to study tissue responses. The project will be carried out in a hospital-based research environment in close collaboration with our biointerfaces research team.

++We Offer++

- Hands-on experience with advanced cell culture, histology, and fluorescence techniques
- Insight into translational neuroscience and biomaterials research
- Supervision in an interdisciplinary academic and clinical environment
- Opportunity to contribute to an innovative research project
- Close interaction with both hospital-based and engineering research teams

Job Benefits

- Employment in an academic setting with interesting insights into research processes
- Valuable work experience
- Flexible hours

Description

++Your Responsibilities++

- Culture and maintain organotypic brain tissue slices
- Perform injections of tumor cells and magnetic nanodisks into tissue samples
- Process tissue samples for histological analysis, including fixation, embedding, and sectioning
- Perform Hematoxylin and Eosin (H&E) staining
- Conduct fluorescence assays and immunofluorescence staining
- Investigate tissue responses, activation pathways, and nanomaterial biocompatibility
- Optimize magnetic stimulation parameters and experimental protocols
- Work according to established laboratory protocols with high precision and reproducibility

Qualifications

++Your Profile++

- Background in neuroscience, biology, biomedical sciences, biotechnology, or a related field
- Basic understanding of neurobiology or cellular biology
- Experience with histology or immunofluorescence techniques is an advantage
- Strong interest in laboratory-based biomedical research
- Careful, reliable, and structured working style
- Ability to work independently as well as in a collaborative research team

Supplementary description

++Application++

If you are interested, please send your CV and a short motivation letter to:

contact-biointerfaces@fau.de and giulia.villa@uk-erlangen.de

Interessiert?

Die vollständige Stellenausschreibung sowie alle Infos zum Bewerbungsverfahren finden Sie hier: