



Open PhD Position

Topic: Cellular response to Bromine and Lithium containing Mg- thin films

Place of Work: Helmholtz Centre Geesthacht

The Graduate School Materials for Brain (M4B - <https://www.grk2154.uni-kiel.de/en/overview>): “Thin film functional materials for minimally invasive therapy of brain diseases” investigates nano- and microscale therapeutically active coatings for their suitability as therapeutic brain implants. First application approaches will be epilepsy, aneurysm, and glioblastoma. Investigations according to material-controlled drug release, implant interactions as well as suitability of the implants for diagnostics with magnetic resonance imaging (MRI) are in the focus of the different research projects. The investigation and development of such cutting-edge localized therapies and suitable functional materials requires substantial interdisciplinary collaboration between materials science, biology and medicine, and is characteristic for this Research Training Group.

Bromide and lithium possess interesting properties to treat or protect against seizure and other brain diseases such as Alzheimer's. In the project **Code P1b**, the interaction of cells with Br- or Li-containing Mg- thin films will be studied *in vitro*. The response of brain – glial cells, either in monoculture or in coculture with *e.g.*, endothelial cells will be studied on cell and molecular biology levels (*e.g.*, selected genes and proteins expressions) to understand the underlying mechanisms. A second important parameter will be the influence of the (co)cultured cells on the degradation of the films. Ultimately, a model shall be developed, which describes the mechanisms of cell-material-interactions to make predictions of the implant degradation and biological responses, to optimize Mg-based materials for brain-related medical applications.

The positions will be awarded for three years, **starting as soon as possible**. The weekly working time is 75% of a full employment (currently 29.025 hours). The salary corresponds to the level of E 13 TV-L of the German public service salary scale.

Your Qualification

- Research-based master's degree or diploma preferably in biology, biomaterials science, materials science with a strong cell culture background, medicine, (bio)chemistry, or a related subject
- Skills in cell culture or molecular biological techniques, fluorescence microscopy or spectroscopy
- Very good English language skills in speaking and writing
- Pro-active attitude, good communication skills and the ability to work efficiently in an interdisciplinary team

Our Offer

- Work in an international research team at the Helmholtz Centre Geesthacht (appr. 100 km south of Kiel) and Kiel University with state-of-the-art lab facilities incl. cell culture and corrosion laboratories
- Comprehensive academic support program including subject-specific courses, soft skill training, research stays abroad, individual career coaching. Participation is mandatory.

Formal Requirements

English skills: Although a test score (e.g. TOEFL or IELTS) is not mandatory, it may be a good supportive document for your application.

Your complete application includes:

- Letter of motivation
- Your CV
- Your Master's degree certificate AND transcript (if you will graduate by the end of 2019 and have not received your Master's degree at the time of application, please submit your latest records transcript)
- Your Bachelor's degree certificate AND transcript
- Your secondary school leaving certificate qualifying your admission to higher education in your home country
- Two letters of recommendation from your recent academic supervisors or employers carrying the official university or company letterhead OR contact details of two referees.

Documents issued in a language other than English or German must be translated into English AND certified by a public notary/German Consulate with an official seal.

Applications that do not fulfill the formal requirements will not be processed.

Please do not send applications via email to individual Principal Investigators of the Research Training Group. Such emails will not be considered. Only applications submitted via the online application platform (see link) will be accepted. Please carefully read the formal requirements before completing the online application form.

Please refrain from submitting application photos.

Deadline: **Applications close on April 30th, 2020.**

A three-stage selection process will then take place:

- (1) Suitable candidates will be invited to two video interviews.
- (2) Successful candidates will then be invited to a personal interview at the Helmholtz Center Geesthacht. Candidates will receive accommodation and financial support for travel expenses.

Contact: grk2154@tf.uni-kiel.de or regine.willumeit@hzg.de

For more information see:

Metallic Biomaterials at Helmholtz Center Geesthacht

GRK M4B Kiel: <https://www.grk2154.uni-kiel.de/en>