



The University of Lübeck stands for excellent research and excellent teaching. We are a modern foundation university with thematically focused study programs. Under the motto "In Focus on Life", as a life science university we offer a spectrum ranging from medicine, health sciences and psychology to mathematics, computer science, natural sciences and technology.

At the Institute of Biomedical Optics (Director: Univ.-Prof. Dr. Robert Huber) at the University of Lübeck, a full-time position is available as soon as possible as a

Scientist (m/f/d)

initially limited to 3 years. The possibility for scientific qualification (PhD) is given.

Aim of this research project is to optimize laser irradiation of the retina, such as photocoagulation as the most successful therapeutic laser application to date, with respect to automatic real-time laser dosing. For this purpose, innovative model predictive control (MPC) algorithms are to be realized and to be experimentally explored. Based on an optoacoustic real-time temperature measurement (at 10 kHz), a predefined target temperature shall be automatically reached and maintained by controlling the application laser power. The control compensates the locally varying pigmentation at the retina and the varying light scattering in the eye.

This project is embedded in a framework of joint research together with the Institute of Automatic Control of the Leibniz University Hannover and the Department of Optimization-based Control of the TU Ilmenau, and is funded by the German Research Foundation (DFG).

Main activities

- Experimental setup and control, laser modulation
- Experimental work, including measurements on phantoms and tissue
- Evaluation of measurement data
- Testing and further development of the control algorithms developed by the project partners

Requirements

- Completed master studies in physics, engineering or computer science
- Experience in optics and laser physics and technology or (opto)acoustics
- Good knowledge of mathematics (modeling) and programming (C, C++, Labview)
- Experience with scientific publications and good English skills are advantageous
- Ability to work in a team, creativity and interest in interdisciplinary cooperation

We offer

- Company pension plan
- Flexible working hours
- Mobile working
- Possibilities to reconcile work and family life
- NAH-SH job ticket, participation in university sports, discounted canteen meals on campus and many other offers for employees
- "Healthy university" health management
- Opportunities for further education and participation in international conferences



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The position will be graded in accordance with the automatic pay scale if the requirements of the collective bargaining agreement are met up to pay group 13 TV-L. A final job evaluation is reserved.

The University of Lübeck sees itself as a modern and cosmopolitan employer. We welcome your application regardless of your age, gender, cultural and social background, religion, ideology, disability or sexual identity. We promote gender equality. Women are given priority in cases of equivalent suitability, ability and professional performance. As an applicant with a severe disability or equivalent, we will give you preferential consideration if you are suitable.

If you have any further questions about the job, please contact Dr. Ralf Brinkmann at +49 451 3101 3207 or by e-mail at ralf.brinkmann@uni-luebeck.de.

Please send written applications with the usual documents (curriculum vitae, references), summarized in a single PDF document to Dr. Ralf Brinkmann.