

PhD student in quantitative non-invasive glucose sensing (f/m/d)

The Chair of Biological Imaging (CBI) at the Technical University of Munich (TUM) and the Institute of Biological and Medical Imaging (IBMI) at Helmholtz Munich are an integrated, multi-disciplinary research structure. Together they form the cornerstone of a rapidly expanding bioengineering ecosystem in Munich, Germany; including the Research Center TranslaTUM and the Helmholtz Pioneer Campus, which integrate bioengineering with oncology and metabolic disorders, respectively. CBI scientists develop next-generation imaging and sensing methods to measure previously inaccessible properties of living systems, hence, catalyzing breakthroughs in biology, medicine and the environment. Comprising 11 inter-disciplinary laboratories and scientists from more than 25 countries, CBI offers state-of-the-art infrastructure for innovative research and a perfect environment to accelerate your career.

We now seek a highly qualified and motivated PhD candidate (f/m/d) to drive the development of model-based and data analysis methods for quantitative non-invasive glucose sensing by means of our unique label-free molecular detection technology.

The Mission:

In the EU-funded research project GLUMON, we aim to leverage a new class of a biomedical optoacoustic sensor to offer the next generation in-blood non-invasive biochemical sensing in-vivo, thus addressing the limitations of existing biomedical sensors. A driving innovation is the ability to reject signal/data contamination from the skin surface and non-invasively detect glucose directly in vasculature-rich skin layers, effectively offering in-blood glucose monitoring abilities.

The successful candidate will develop and apply data analysis methods for quantitative non-invasive glucose determination of glucose in human skin—a work that aims at improving the lives of millions of diabetic patients worldwide. The development process will give the successful candidate the opportunity to strengthen her/his skills in optics, lasers, and computation, but also in biological systems relevant to biosensing. The successful applicant will be involved at every stage of sensor design and simulation, testing, and application, as well as with dissemination of results in the form of scientific publications, presentations, intellectual property production, spin-offs, and commercialization.

Your profile:

The successful applicant must have the following:

- A Master degree in Computational Science, Physics, Optics, Engineering, Medical Technology or a related discipline.
- Excellent academic study record
- Strong motivation, scientific curiosity, and commitment to scientific excellence.
- Excellent programming skills (for example: Matlab, LabView, C/C++, Python, etc.)
- Team player skills and enthusiasm to work in a multi-disciplinary, collaborative environment.
- Excellent command of the English language.

The following qualifications are considered advantageous:

- Proven experience in experimental research
- Basic knowledge of microscopic imaging
- Practical experience with laser-based optical systems
- Practical experience in hardware control, data acquisition and synchronization, system development and integration

Our offer:

We offer you the unique chance to make a difference in future healthcare. At CBI, we strongly believe in scientific excellence and innovation. This is your opportunity to be part of and to advance your career in a world-leading research institute, where bioengineering principles meet today's challenges in biology, medicine and environmental health to develop the solutions of tomorrow. CBI provides a highly international, multi-disciplinary environment with excellent opportunities for professional growth. You will be part of a dynamic, professional, and highly motivated team within a stimulating environment and gain international exposure through our partners and collaborators across Europe and the world. TUM offers a wide variety of inspiring and challenging PhD programs, which will supplement your research training with outstanding opportunities for career development, continued education, and life-long learning.

Situated on the foothills of the Alps, Munich is consistently ranked as one of the most vibrant and enjoyable cities in the world, with an exceptionally quality of life. Greater Munich is also home to several world-class universities and research institutes, creating a truly inspiring intellectual atmosphere.

The successful applicant will initially have a 3-year contract, with the possibility of extension. Salary will commensurate with work experience and seniority (Free State of Bavaria TV-L E13-65%). As an equal opportunity and affirmative action employer, TUM explicitly encourages applications from women as well as from all others who would bring additional diversity dimensions to the university's research and teaching strategies. Qualified applicants with physical disabilities will be given preference.

Your application:

We are looking forward to receiving your comprehensive application including your letter of motivation, CV and academic transcripts of records preferably in English and in a single PDF file, via email to cbi.recruitment@tum.de. Please indicate "PhD student in quantitative non-invasive glucose sensing" in the subject line.

For any question, please contact:

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