Chair of Biological Imaging
Technical University of Munich

Postdoctoral fellow or Ph.D. student for the development of instrumentation for high-resolution Optoacoustic whole animal imaging (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 and 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.

Join our team and be part of our rich and dynamic research culture of enquiry and innovation. CBI researchers come from the top ranks of physics, chemistry, engineering, and biomedicine and attract significant investment from national and international sources. Our scientists serve in international societies and conferences and are recipients of a multitude of top international and German awards, including the prestigious Gottfried Wilhelm Leibniz prize and 11 ERC awards. In addition to scientific excellence, CBI promotes entrepreneurship, company spin-off activities, and collaborations with other top academic institutions and leading corporations in the photonics, pharmaceuticals and healthcare sectors.

We now seek a highly qualified and motivated **Postdoctoral fellow** or **Ph.D. student** (f/m/d) to drive the development of a novel type of Optoacoustic in vivo imaging system with superior resolution while maintaining penetration depth of several millimeters – going beyond state-of-the-art multiphoton and bioluminescence imaging in life-sciences alike.

The Mission:

Optoacoustic imaging (e.g. MSOT and RSOM) combines the versatile contrast of optical imaging with the deep penetration of ultrasound imaging. These characteristics give optoacoustic imaging a competitive edge over other imaging methods currently applied in biology and medicine. The successful candidate will develop an instrumentation that links the high resolution of raster scanning optoacoustic mesoscopy (RSOM) with pulsed diode powered excitation and locked-in detection to allow obtaining cellular resolution in several millimeters' depth in the live animal. The project is a joined effort with other renowned laboratories from France, the Netherlands and Switzerland, that contribute for example AI based data analysis as well as custom electronics and ultrasound-transducer development. Hence the successful candidate will not only develop instrumentation but also function as the linking hub between the partner groups – resulting in truly international and interdisciplinary work.

Opportunities for Talents

Your profile:

The successful applicant must have the following:

- Master degree (and a Ph.D. for postdocs) in Physics, Engineering or Chemistry
- Exceptional, documented, command of optical imaging techniques, optics and imaging/setup related electronics
- Hands-on experience in setting up advanced optical imaging technology
- In-depth programming skills in MATLAB and C for instrument control (e.g. stages, DAQs, Arduinos etc.)
- Strong background in imaging, signal and image processing, data quantification and analysis
- Preferably background in ultrasound detection or Opto-/Photoacoustic imaging
- Excellent track record of research achievements and publications in top-ranked journals
- Strong motivation, resilience, scientific curiosity and commitment to scientific excellence
- Team player skills and enthusiasm to work in a multi-disciplinary, collaborative environment
- Excellent command of the English language
- Good command of the German language is considered an advantage

Our offer:

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. We support 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 2-year contract (3 years for Ph.D. students), with the possibility of extension. Salary will commensurate with work experience and seniority (TV-L E13; for PhD students 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.

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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 "**Postdoctoral fellow or Ph.D. student for the development of instrumentation for high-resolution Optoacoustic whole animal imaging (f/m/d)** " in the subject line.

For any question, please contact (but please send your application only to recruiting address above):

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