

Postdoctoral fellow in clinical optoacoustics: Imaging metabolism and metabolic diseases (f/m/d)

Are you passionate about science, full of ideas and innovative potential that drive change and enjoy working in an international, fast-paced environment? Are you motivated by the societal impact of research and seek an opportunity to play an instrumental part in the development of emerging technologies for biology and healthcare? Then the Chair of Biological Imaging (CBI) at the Technical University of Munich (TUM), as well as, the Clinical Bioengineering Group of the Institute of Biological and Medical Imaging (IBMI) at the Helmholtz Zentrum München (HMGU) in Munich, Germany is the ideal environment for you!

CBI is the cornerstone of a rapidly expanding bioengineering ecosystem in the Munich science area; 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 and medicine. 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. Our research aims to shift the paradigm of biological discovery and translation to address major health challenges of our time and develop the medical solutions of tomorrow.

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, engineering, chemistry, biology and medicine and our pipeline frequently yields high-impact papers, successful technology spin-offs and commercialization. Our research is regularly featured in major news channels and received broad recognition including several prestigious awards and considerable research funding from national and international sources.

We now seek a highly qualified and motivated **Postdoctoral fellow** (f/m/d) to drive clinical applications on imaging metabolism and metabolic diseases using novel hand-held optoacoustic imaging technologies, such as the Multi-Spectral Optoacoustic Tomography (MSOT) and Raster-Scan Optoacoustic Mesoscopy (RSOM).

The mission:

Optoacoustic imaging (e.g. MSOT and RSOM) combines the high contrast and resolution of laser excitation 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 lead advances within experimental and computational developments of clinical optoacoustic imaging with a focus on imaging metabolism and metabolic diseases, such as diabetes, obesity and lipid disorders.

The goal is to combine experimental work (e.g. phantoms, preclinical imaging) along with novel computational methods and clinical studies (healthy volunteers and real patients) to create a synthetic framework on imaging metabolism and metabolic diseases with clinical optoacoustics.

The project is geared toward clinical applications of hand-held optoacoustic imaging systems (MSOT and RSOM) that deliver label-free imaging and sensing of diverse biological components. We expect this project to result in a substantial technology leap, leading to important biological breakthroughs and translation into clinical diagnostics. The development process will give the successful candidate the opportunity to strengthen her/his skills in state-of-the-art optoacoustic imaging technology,

cutting-edge computational approaches and clinical metabolic studies. She/he will be involved in every stage of study design, testing and application, as well as with dissemination of results in the form of publications and potentially patents.

Your profile:

The successful applicant must have the following:

- A Ph.D. in Engineering, Physics, Computer Science or a related discipline
- Strong motivation for hands-on experimental work and clinical measurements
- Excellent track record of research achievements and publications in top-ranked journals
- Strong motivation, scientific curiosity and commitment to scientific excellence
- Research experience in one or more of the following areas: clinical imaging, optoacoustic imaging, optical imaging, signal processing, image processing
- Expert knowledge of imaging, signal and image processing, data quantification and analysis
- In-depth programming skills in MATLAB / Python
- 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
- Machine learning experience is considered an advantage

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 and medicine 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 professional and highly motivated interdisciplinary team of the Clinical Bioengineering Group within a wider dynamic and stimulating environment. We support career development, continued education and teaching and training opportunities.

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, with the possibility of extension. We offer a competitive salary and benefits depending on work experience and seniority in accordance with the public service wage agreement of the Free State of Bavaria (TV-L E 13). 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. Preference will be given to disabled candidates with essentially the same qualifications.

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 "Posdtoc in clinical optoacoustics" in the subject line.

For any question please contact:

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