PhD candidate in optoacoustic imaging (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, healthcare and environmental applications? Then the Chair of Biological Imaging (CBI) at the Technical University of Munich (TUM), Germany and its integrated Institute of Biological and Medical Imaging (IBMI) at the Helmholtz Zentrum Muenchen (HMGU) 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, 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. 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, biomedicine and computer science and our pipeline frequently yields high-impact papers, successful technology spin-offs and commercialization. Our research is regularly featured in major news channels and has received broad recognition including several prestigious awards and considerable research funding from national and international sources.

We now seek a highly qualified and motivated PhD candidate (f/m/d) to develop novel optoacoustic imaging systems and drive their impact into clinical routine.

The Mission:

At CBI, we are pushing the limits of resolution, imaging depth, imaging speed, contrast coverage, specificity and sensitivity of optical imaging. Optoacoustic imaging combines the rich contrast of optical excitation with the high penetration to depth ratio of ultrasound imaging, lifting the diffusion barrier of optical imaging. These characteristics give optoacoustic imaging a competitive edge over other imaging methods currently applied in biology and medicine.

As a next step in developing optoacoustic devices for real-world applications, the successful candidate will further develop our imaging systems and proof their ability to challenge current clinical methodologies in major fields like cancer and metabolic disorders.

The development process will give the successful candidate the opportunity to strengthen her/his skills on state-of-the-art image reconstruction algorithms, image processing, signal processing, forward and inverse modelling, lasers, optics and 3D printing. She/he will be involved with every stage of device design, prototyping and testing, as well as with dissemination of results in publications and at conferences as well as in the form of IP production, spin-offs and commercialization.
Qualifications

- High motivation, scientific curiosity and ability to work independently
- A degree in Physics, Optics, Engineering, Medical Technology or a related field
- A stellar academic record
- Programming capabilities ( Matlab, C/C++ or analogous)
- Knowledge on the basic physics of ultrasound propagation and optics
- Knowledge on signal and image processing algorithms
- Ability to program control software for hardware elements like DAQs, stages and similar
- 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:

- Knowledge of optoacoustic imaging
- Knowledge on numerical mathematical modelling and inversion

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. IBMI 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 have a 3-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 13-65%). 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. 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 "PhD candidate (f/m/d) to develop novel optoacoustic imaging systems in the subject line."
For any questions please contact:

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