

Ph.D. position in Raman spectroscopy (f/m)

The Chair of Biological Imaging (CBI) at the Technical University of Munich (TUM) in Munich, Germany, and the Institute of Biological and Medical Imaging (IBMI) at the Helmholtz Zentrum München (HMGU) are an integrated, multi-disciplinary research structure and form the cornerstone of a rapidly expanding bioengineering ecosystem in Munich. Including the Research Center TranslaTUM and the Helmholtz Pioneer Campus which integrate bioengineering with metabolic disorders and oncology, 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.

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 several 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 **Ph.D. student (f/m)** to drive the development of novel methodologies for the analysis of Raman spectra acquired in clinical settings.

The mission:

The successful candidate will lead advances within an innovative research program that develops a novel endoscope combining stimulated Raman spectroscopy and scattering. The goal is to shift the paradigm in cancer early diagnosis. The project is geared toward methods development to analyze the acquired multimodal data and to provide fast and accurate label-free *in vivo* biopsy. We expect this project to result in a substantial technology leap in cancer early detection, enabling rapid translation into clinical diagnostics and personalized surveillance intervals.

Your profile:

The successful applicant must have the following:

- An M.Sc. in Physics, Electrical Engineering, Computer Engineering, Biomedical Engineering or related discipline.
- Excellent academic records.
- Strong motivation, scientific curiosity and commitment to scientific excellence.
- High knowledge of Raman data processing, analysis, and classification.
- Knowledge of machine learning techniques and statistics is highly appreciated.
- In-depth programming skills in MATLAB for data analysis. LabVIEW programming, C++ skills, robotics and/or other relevant experimental skills are an advantage.
- Team player skills and enthusiasm to work in a multi-disciplinary, collaborative environment.
- Excellent command of the English language.

Our offer:

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 offering excellent opportunities for professional growth and everything you need to achieve outstanding research findings leading to high-impact publications. We support career development, continuing education and teaching and training opportunities.

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

The successful applicant will initially have a 3-year contract, with the possibility of extension. Salary will be commensurate with work experience and seniority (TV-L E 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 "Ph.D. position in Raman spectroscopy" in the subject line.

For any question please contact:

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