

1 PhD Position (e.g. Physicists) available on “Novel light-applicators with patient-adaptable beam characteristics”

Within an SME/RTO cooperation project funded by the ZIM program (*Central Innovation Programme for small and medium-sized enterprises*) of the German BMWK (*Federal Ministry for Economic Affairs and Climate Action*), the LFL / LIFE Center at the Hospital of Munich University offers a PhD position in Laser medicine and Biophotonics. The project strives to develop and implement a novel approach for endoluminal light-based treatments with light-applicators individually adaptable to each patient.

Within the 2-years period Dec 2023 – Nov 2025, the following goals shall be pursued:

- Develop and test efficient simulation, design and manufacturing methods to tailor the emission profile of light-applicators
- Develop and test a closed-loop-feed-back system to adapt the light application based on tissue response
- Based on ex-vivo tissue, optimize the treatment results while simultaneously minimizing treatment time, risk and side effects

Main tasks to be performed by the PhD candidate:

- Definition of desired emission profiles
- Establishing a requirements profile for the light-applicators to be developed
- Determination of optical and thermal properties of the target tissue
- Simulation of light propagation and thermal response in the target tissue
- Performing application tests on model samples (artificial and ex-vivo tissue) and devices
- Measurement, evaluation and interpretation of tissue-related feed-back signals
- Information exchange, discussion and collaboration with other project partners

Your qualification:

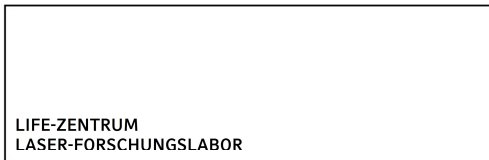
- Master of Science (Physics, Medical Physics, Biomedical engineering, Photonics, or similar)

Your skills and interest:

- Knowledge in optical technologies and imaging methods
- Experimental and technical skills and interest in optical set-ups and instrumentation
- Affinity to theoretical concepts and programming / simulations (e.g. using Matlab, Comsol, LightTools, FullMonte)
- Interest in interdisciplinary work and scientific ambition

We offer:

- Attractive research environment with friendly colleagues.
- Interdisciplinary cooperation within an enterprise / public research consortium.
- Participation in the Advanced Structured Training (AST) Program for PhDs and MDs at Department of Urology and LIFE Center at LMU Klinikum, designed to broaden the (professional) / (scientific) horizon and personal skills.
- Dedicated scientific and personal support.



Disabled candidates are preferentially considered in case of equal qualification. Applications from women are encouraged.

If you are interested in this opportunity, please apply **IMMEDIATELY (preferably until Oct 27, 2023)**. To apply for the position, please send your electronic application (**letter of motivation, curriculum vitae, last school certificate and university degree, publication list, other qualification certificates like TOEFL, two references and ideally one recommendation letter**), preferably in PDF format, by e-mail to

Ronald.Sroka@med.uni-muenchen.de

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