



The research group "Medical Photonics" of the Institute of Photonic Technologies (LPT) at the Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) is looking for

### **Doctoral candidate (f/m/d)**

for the project „Hyperspectral depth reconstruction by an iso-point approach for understanding of the light matter interaction on a macroscopic scale in turbid media.“\*

The main goal of the Clinical Photonics Lab (CPL) is to explore optical technologies in biology and medicine with a focus on diagnostics. The planned research project focuses on the quantitative transformation of hyperspectral images into depth maps of inclusions using the iso-point approach. In this way, for example, three-dimensional angiographic information can be obtained non-invasively from a distance with a single image. The aim is to ensure that the method is applicable to a wide range of scattering and absorption coefficients of the tissue under investigation. Due to recent advances in commercially available hyperspectral cameras, the iso-point method enables the reconstruction of depth information with a much cheaper and simpler setup compared to photoacoustic tomography or optical coherence tomography.

Take the opportunity to start your scientific career with us!

#### **Responsibilities:**

- Independent research activity to obtain structural depth information from hyperspectral images.
- Establish and deepen international and interdisciplinary cooperation with universities and research institutions
- Grow with our team through varied challenges
- Initiate new projects with government funding
- Publish scientifically
- Support in the teaching, supervise bachelor's and master's theses

#### **Requirements:**

- University degree (M.Sc.) in mechanical engineering, medical technology, physics or a comparable course of study.
- Experience in the field of optics is very advantageous
- Motivation for scientific work in the field of hyperspectral imaging
- Willingness for personal and professional development in the context of a doctorate to Dr.-Ing., integrated into the SAOT as a doctoral researcher
- Exceptional motivation and initiative
- Independent and self-reliant working style
- Strong communication skills and ability to work in a team
- Good level of German
- Interest in expanding the research group

#### **Employment:**

Temporary according to TV-L E13 (100 %)

#### **Applications to:**

Prof. Dr.-Ing. Michael Schmidt, [sekretariat@lpt.uni-erlangen.de](mailto:sekretariat@lpt.uni-erlangen.de)

#### **\*Keywords:**

PhD, Hyperspectral imaging, medical technology, turbid media, spectroscopy, tomography