

Doctoral researcher position (m/f/d)

Adaptive optics for remote fluorescence sensing in forests

Project B2 within the CRC SFB-1537 **ECOSENSE**

Who we are:

The Department of Microsystems Engineering (IMTEK) at the University of Freiburg is one of the largest research institutes dedicated to microsystem engineering. The IMTEK Laboratory for Microactuators is working in the field of microactuators, wireless power transfer, and adaptive optics.

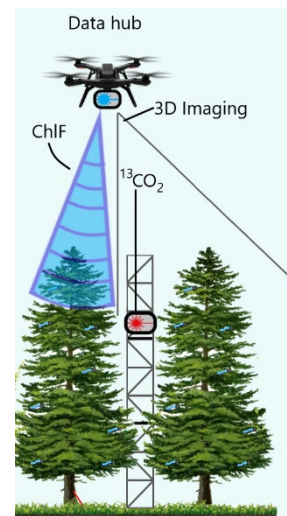
Your Task:

In ECOSENSE you will be working in an interdisciplinary project team which aims at the remote sensing of fluorescent signals measuring the photosynthesis efficiency of trees as a sensitive stress marker. Your specific task will be the development of a robust adaptive optical element allowing for an in situ scanning and focusing using one integrated Optical MEMS component.

For details on ECOSENSE, see

<https://www.cep.uni-freiburg.de/forschungsprojekte/ecosense>

We preferably actuate our adaptive optical elements with piezoelectric actuators, but are open to other actuation mechanisms if they are more promising. We fabricate the components in our laboratories by means of laser structuring, polymer processing and assembly techniques. The prototypes are finally evaluated by opto-mechanical measurement methods and with respect to the foreseen application. In context of this project we anticipate three measurement scenarios: in the lab, mounted on a drone, again in a suitable laboratory environment, and finally on the drone in our ECOSENSE Forest, a field site in the near-by Black Forest.



Your qualification:

We are looking for candidates (m/f/d) with a Master of Science degree in microsystems, electrical or mechanical engineering, mechatronics, photonics, physics, or similar. Applicants should have optimally

- good knowledge in electrical/mechanical engineering and or optics
- first experience with simulation software (ANSYS, COMSOL, ZEMAX) and LabView
- hands on experience in manufacturing or microsystems processes
- experience with embedded systems (Arduino based)
- very good English language skills and preferably also basic German knowledge

What we offer

We offer an exciting research topic in a large interdisciplinary team covering many aspects of forest ecosystem research. Salary is paid according to **TVL**. **The position will be extended and upgraded to 100% employment by July 2024 until end of June 2026.** The possibility for pursuing a doctoral thesis (grade Dr.-Ing.) is given, provided that all formal criteria are fulfilled. You can expect modern laboratory equipment and a highly qualified, multicultural team, which will cooperate with you and support you along your professional growth.

Details on the documents required for your application, and on the required form of the application are to be found on <https://www.cep.uni-freiburg.de/forschungsprojekte/ecosense>. Please **follow these rules strictly** and send your job application in a digital form until **August 21, 2022**, to the following persons:

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