The *Laboratory of Measurement and Sensor System Technique (MST)* offers a position as

Research Associate: Microrobot Laser System

+++ Digital Holography +++ Adaptive Optics +++ 3D Localization Microscopy +++ Microrobots +++

The position offers the chance to obtain further academic qualification (Ph.D. / Dr.-Ing. / Dr. rer. nat. / habilitation).

The Laboratory MST and the Competence Center BIOLAS is conducting research on advanced laser imaging systems. We aim to investigate the effects on the generation of motion and interaction of photocatalytic microswimmers by analyzing the induced flows under non-uniform illumination. A profound understanding of the microswimmer motion is the key to design specific applications such as drug delivery in living organisms. Your task is to develop a laser system for illuminating photocatalytic microswimmers with complex light fields and to analyze its response by means of 3D microscopy.

Your tasks:

- setup a holographic light projection system using a spatial light modulator
- implement a laser microscope with a double-helical point-spread function for 3D flow field analysis around the microswimmer
- make experiments under inhomogeneous illumination and the steer the microswimmer with light
- facultative: apply machine learning approaches for image analysis / hologram calculation

We offer:

- a diverse, ambitious, and burning research issue
- an interdisciplinary and international research team
- creative possibilities and room for self-development and own research interests
- visits of international conferences
- cooperation with excellent partners from the application field
- modern laboratories with state-of-the-art equipment and own device budget

Your requirements: Above-average university degree in physics, electrical engineering, mechatronics or similar studies; ability for working autonomously and goal-driven within a team; great commitment, analytical thinking and taking joy in practical work and basic research are expected. Prior knowledge in wave optics, holography or light microscopy is advantageous.

Please address topical questions to Lars Büttner (e-mail lars.buettner@tu-dresden.de, phone +49 351 463 35314). Submit your comprehensive application including the usual documents preferably as a single pdf file by mail to: **grp-mst-sekretariat@msx.tu-dresden.de**

Technische Universität Dresden
Laboratory for Measurement and Sensor System Technique
01062 Dresden, Germany
E-mail: grp-mst-sekretariat@msx.tu-dresden.de
Web: www.tu-dresden.de/et/mst/