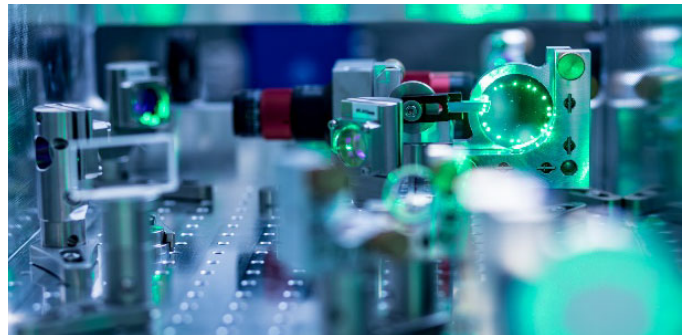
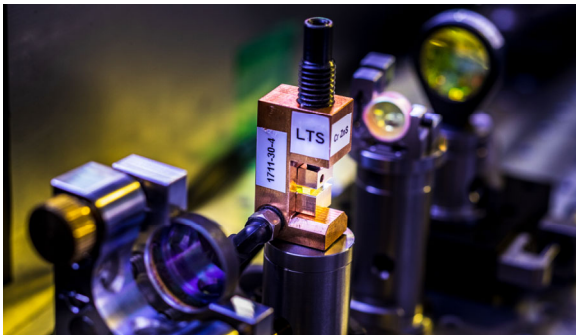


The Chair of Laser Technology at the Faculty of Electrical Engineering of the Helmut Schmidt University (Bundeswehr University Hamburg) offers for a limited duration of one year:

**Master thesis project in combination
with a student assistant position
(9,35 €/hour, max. 18 h/week)**



Our research activities focus on fundamental laser research for civil uses with a special emphasis on spectroscopic applications. Our field of research ranges from the development of disk laser oscillators, dual-comb spectroscopy and XUV frequency combs to the investigation of non-linear effects in solids and the extension of laser technology in the infrared range [1-3].

The main topic of this master project is the generation of ultra-broadband infrared (THz) time transients and realization of sensitive infrared detection methods. Infrared generation will be produced by means of nonlinear optical effects with the help of a home-built, state of the art few-cycle Cr:ZnS oscillator. This newly developed laser systems and spectroscopic methods offer a broad potential for applications in next-generation non-linear microscopy and nanoscopy, as well as in medical diagnostics, particularly, in breath analysis.

This topic offers an excellent chance to contribute to the state-of-the-art ultrashort-pulse laser technology and related applications in close cooperation with our international research team.

[1] J. Zhang et al. und O. Pronin, „Multi-mW, few-cycle mid-infrared continuum spanning from 500 to 2250 cm⁻¹“, Light: Science & Applications 7, 17180, 2018.

[2] <https://www.hsu-hh.de/lts/>

[3] K. Fritsch et al. and O. Pronin, “High-power dual-comb thin-disk oscillator”, Talk CA-5.2, CLEO Europe conference, 2019

Areas of responsibility:

- developing new methods of infrared generation and detection
- application of the developed technology in novel non-linear ultrashort-pulse spectroscopy, microscopy and nanoscopy

Qualification requirements:

- Bachelor degree in physics or photonics
- good grades
- good language skills in English

Desirable:

- Master studies with a focus on laser physics or photonics
- candidate must be highly motivated and have the excellent ability to perform as a team member, while displaying creative problem solving capability
- capacity for independent work, commitment and flexibility

We offer:

- inexpensive food options at the university canteen (three times per day)
- a multi-faceted, diverse and demanding position in an application-oriented research environment
- advanced individual training possibilities
- workplace at a green campus university in the eastern part of Hamburg with flexible working hours and free sports programme within the occupational health scheme
- possibility of using the Bundeswehr-owned car sharing

If you have any technical questions, contact Prof. Dr. Pronin, oleg.pronin@hsu-hh.de or Johann Meyer, johann.meyer@hsu-hh.de.

This position is open to persons of all genders. We explicitly welcome applications from women. Women will be given preferential consideration, if applicants are equal in aptitude, qualification and professional achievement in areas in which women are underrepresented, unless reasons concerning the personality qualifications of a fellow applicant takes precedence.

We explicitly welcome applications from handicapped people. Severely handicapped people and people of comparable status will be given preferential consideration, if applicants are equal in aptitude. They are only required to have a minimum of physical aptitude. Individual handicap-related limitations will only preclude preferential consideration, if the profile of the post in question absolutely requires certain capabilities.

Information on data protection provisions within the scope of the application procedure can be found on the website of the Helmut Schmidt University/Bundeswehr University, Hamburg (HSU/UniBw H) under the heading "Universität - Karriere - Datenschutzinformationen".

Please send your application and the standard documents required – in electronic form (pdf file) only! – to the address below by 22.03.2020, stating the reference number (ET-0320):

personaldezernat@hsu-hh.de

NOTE: Your application cannot be processed without indication of the reference number and will be deleted in accordance with applicable data protection regulations.

