



Universität Hamburg

DER FORSCHUNG | DER LEHRE | DER BILDUNG



# PROFESSORSHIP (W3) FOR EXPERIMENTAL PHYSICS WITH A FOCUS ON PLASMA ACCELERATOR SCIENCE

**Institution:** Faculty of Mathematics, Informatics and Natural Sciences in a joint academic search procedure with DESY (Deutsches Elektronen-Synchrotron)

**Salary level:** W3

**Commencement of duties:** as soon as possible

**Application deadline:** 2022-07-14

As a University of Excellence, Universität Hamburg is one of the strongest research universities in Germany. As a flagship university in the greater Hamburg region, it nurtures innovative, cooperative contacts to partners within and outside academia. It also provides and promotes sustainable education, knowledge, and knowledge exchange locally, nationally, and internationally.

DESY is one of the world's leading research centers for photon science, particle and astroparticle physics as well as accelerator physics. Accelerator physics and technology is one of the core competences of DESY. In addition to operating large scale accelerators such as the PETRA III synchrotron storage ring, the FLASH and European x-ray free electron lasers, DESY has an ambitious and exciting program in the development of plasma-based particle accelerators. This promising high-gradient accelerator technology is being developed towards deployment as both compact portable devices and as powerful accelerators to drive a new generation of experiments and innovation. In recent years, many achievements at DESY have advanced the state of the art in this technology through experiments at the beam-driven FLASHForward facility and the laser-driven LUX system in the joint laboratory with Universität Hamburg, as well as through advanced simulations and theoretical developments. Universität Hamburg combines cutting-edge research in the Department of Physics, investigating new biomedical imaging techniques for preclinical applications, with joint experimental studies with the University Medical Center Hamburg-Eppendorf (UKE). This research aims to pave the way to medical applications of laser-plasma-based X-ray sources.

## Responsibilities:

We are looking for a candidate with an outstanding international reputation in the field of plasma-based particle accelerators who is willing to actively participate in shaping the future of plasma accelerator science and to contribute to the research areas at DESY and Universität Hamburg. Successful candidates are expected to participate in relevant activities in plasma accelerator research and development and to foster collaboration with the Department of Physics at Universität Hamburg, in particular by contributing to the current and planned clusters of excellence.

Candidates must have experience and have conducted relevant research in electronbeam-powered and laser-driven plasma-based particle acceleration, plasma-accelerator driven photon sources, plasma-based optical beam elements, modeling of plasma accelerators on high-performance supercomputers, generation and diagnosis of femtosecond beams from plasma, and the development of plasma accelerators toward applications of high societal relevance. Moreover, profound experimental and theoretical knowledge is expected.

The tasks of the future postholder include representing accelerator research and development in Hamburg and in national and international networks and committees, providing scientific advice and guidance to the rich and dynamic landscape of novel accelerator science, and making personal contributions to plasma-based accelerator science to advance the field as a whole.

The successful candidate is expected to actively drive the existing curriculum for accelerator and elementary particle physics and to further develop the curriculum and research programs of the Department of Physics in collaboration with its professors, applying for a graduate school where feasible. The professorship entails teaching duties of two semester hours per week at Universität Hamburg, especially at the bachelor level. The successful candidate is also expected to supervise bachelor's theses, master's theses, and doctoral dissertations.

In their application, applicants are expected to indicate to which of the University's core research areas, emerging fields, or profile initiatives (<https://www.uni-hamburg.de/en/forschung/forschungsprofil/forschungsschwerpunkte.html>) their research can best be assigned. Duties include working in one or more of the core research areas, emerging fields, or profile initiatives.

Section 12 subsection 7 sentence 2 of the Hamburg higher education act (Hamburgisches Hochschulgesetz, HmbHG) applies.

## Requirements:

Academic qualifications and additional requirements as specified in Section 15 HmbHG.

## Additional Criteria:

Applicants are expected to have international research experience as well as a successful track record in acquiring external funding and carrying out externally funded projects. In addition, experience in coordinating national and international networks is beneficial.

The University places particular emphasis on the quality of teaching and therefore requests that applicants provide details of their teaching experience and objectives.

Non-German-speaking post holders are expected to acquire the language skills necessary to teach in German (Level C1 of the Common European Framework of Reference for Languages) within two years of commencing employment.

In accordance with Section 14 subsection 3 sentence 3 HmbHG, Universität Hamburg seeks to increase the proportion of women in teaching and research and encourages female academics to apply.

Severely disabled and disabled applicants with the same status will receive preference over equally qualified non-disabled applicants.

## Tips on applying

### Contact

Prof. Dr. Wim Leemans  
[wim.leemans@desy.de](mailto:wim.leemans@desy.de)

Prof. Dr. Florian Grüner  
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### Reference number

2381/W3

### Application deadline

2022-07-14

Please submit your application with your CV, list of publications, teaching experience, successful external funding record, copies of certification and documents, three representative publications, teaching and research plans, additional evidence of skills and experience, such as presentations, posters, significant roles held in organizations, etc. where available, preferably by email in a single PDF file, to [Bewerbungen@uni-hamburg.de](mailto:Bewerbungen@uni-hamburg.de).

More information on [data protection](#) in selection procedures.

