



Berlin School of
Optical Sciences &
Quantum Technologies

The Berlin School of Optical Sciences and Quantum Technologies (BOS.QT) together with Technische Universität Berlin, Freie Universität Berlin and Humboldt-Universität zu Berlin offers the following open positions:

7 Positions – Research Assistants (d/m/w), 0.75 working time, salary grade E13 TV-L Berliner Hochschulen

1st qualification phase for doctorate subject to funding approval until December 31, 2026.

To be filled immediately/ Limited until December 31, 2026/ Application deadline: March 19, 2023.

If applying, please indicate the project to which your application relates. Applications for several projects are possible (up to three), whereby a prioritization (place 1, 2, etc.) must be indicated in the application documents for the desired project.

Project 9: Research assistant for Atom-interferometric tests of fundamental quantum-mechanics

This position is embedded in the research project GAIN (Gravimetric Atom Interferometer), which is carried out by the Optical Metrology group at the Humboldt-Universität zu Berlin. GAIN is a cold atomic fountain interferometer that measures the gravitational acceleration with state-of-the-art sensitivity and accuracy. In cooperation with the Joint Lab of Integrated Quantum Sensors, we aim to extend the capabilities of the experiment to allow for high-precision tests of quantum mechanics, specifically the linearity of the Schrödinger equation and experimental tests of wavefunction collapse theories.

Department: Humboldt-Universität zu Berlin, Institute for Physics

Tasks:

- Adapt and improve the GAIN setup to allow for high-precision tests of quantum mechanics
- Conduct experiments to test the bounds of the linearity of the Schrödinger equation and collapse models using atom interferometry
- Perform analytical calculations and numerical simulations to support the experimental work
- Work closely with postdoctoral fellows, Ph.D. and Masters students
- Present research results in international journals and at conferences

Scientific and technical competences:

Essential:

- Master's degree in physics (or in related fields with appropriate specialization) at starting date
- Good English skills; willingness to acquire the missing language skills
- Interest in fundamental physics and testing the foundations of quantum mechanics

Desired:

- Practical experience with (ultra-)cold atoms and/or atom interferometry
- Expertise in the development and characterization of laser systems for laser cooling or precision measurement applications
- Programming skills (preferably with substantial experience using Python and Labview)
- General laboratory skills (especially: optics, opto-mechanics, opto-electronics, RF-electronics)
- Good knowledge of analog and digital electronics

For further inquiries and information please contact Prof. Achim Peters, Ph.D. (achim.peters@physik.hu-berlin.de).

Successful applicants* will have a graduate degree in physics or related areas (certificates of Master's, Diploma, or equivalent at the starting date) and previous experience in the above areas of work.

Detailed project descriptions and requirements for each position can be found at:

https://blogs.tu-berlin.de/ioap_bosqt/jobs/.

Admission to BOS.QT is possible upon successful application.

Please send your application with the project number(s) and the required documents by e-mail (in one pdf file, max. 5 MB) to the BOS.QT office: bosqt@physik.tu-berlin.de.

The following documents are required for the application:

CV with publication list, conference papers and awards (see BOS.QT CV template: https://blogs.tu-berlin.de/ioap_bosqt/jobs/); a letter of motivation; the bachelor's degree certificate and transcript of records, the Master's certificate (if issued already) and a transcript of records, a letter of recommendation, preferably from the supervisor of the Master's thesis (directly to the BOS. QT administration: bosqt@physik.tu-berlin.de); a maximum of two names (and email addresses) of people who can be contacted directly by the BOS.QT for another letter of recommendation; the master thesis (or a partial draft as a link or pdf).

By submitting your application via email, you agree to the electronic processing and storage of your data. Please note that we cannot guarantee the protection of your personal data if it is sent as an unprotected file. Please note our data protection information according to DSGVO (General Data Protection Regulation) on the homepage of the [University] [DSGVO website].

To ensure equal opportunities for women and men, applications from women with appropriate qualifications are expressly encouraged. Qualified persons with disabilities will be given preferential consideration. Technische Universität Berlin, Humboldt-Universität zu Berlin and Freie Universität Berlin value the diversity of its members and is committed to the goals of equal opportunity.

Postal address: Anja Meyer do Nascimento Pereira (BOS.QT), TU Berlin, IOAP ER 1-1, Str. des 17. Juni 135, D-10623 Berlin, Germany.

The job announcement is also available on the Internet at: https://blogs.tu-berlin.de/ioap_bosqt/jobs/.