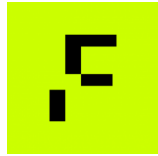


Freie Universität Berlin - Department of Physics



Who We Are The Bolotin research group in the Physics Department of Free University Berlin specializes in nanoscale electronics and optoelectronics of two-dimensional materials and heterostructures. Our focus is to find new ways to manipulate these materials to build systems with designer Hamiltonians – and enable new quantum technologies. Our main experimental tools include nanofabrication, electrical transport measurements, static and time-resolved optoelectronic measurements. Our unique strengths are platforms for nanomechanical manipulation, approaches to reach high carrier densities and electric fields, and techniques to control 2D moirés in situ.

Research assistant (praedoc) (f/m/d) (DM-PHY-791)

Department: Department of Physics contract duration: limited to 4 years Salary / pay grade: E 13 TV-L FU Working hours: 75 % Requisition ID: 791 Application deadline: 19.10.2026

City: Berlin; Starting date (earliest): At the earliest possible; Duration: befristet auf 4 Jahre; Remuneration: Entgeltgruppe 13 TV-L FU; Reference number: DM-PHY-791; Closing date: 19/10/26

Tasks

What You Can Expect in Your New Role

You will work within the recently founded Cluster of Excellence “Center for Chiral Electronics”. In that cluster, more than 25 research groups from physics, chemistry, and engineering collaborate to exploit materials’ chirality (the difference between a material and its mirror image) to store, manipulate, and transport quantum and classical information.

Your project within the Bolotin research group will be to develop a new class of 2D material heterostructures with on-demand tunable chirality. To accomplish this, you will develop a nanomanipulation setup to stack and twist 2D materials inside a cryostat, an optical “quantum twist microscope”. Using this technique, you will study emergent structural chirality in 2D magnetic, excitonic, and spin systems. You will also create hybrid 2D material/molecular systems and study the Chirality Induced Spin Selectivity (CISS) effect in them.

The main experimental tools will be a new 2D material nanomanipulation platform, static and time-resolved optical spectroscopies, and nanofabrication approaches. The third-party funded research project offers the opportunity to pursue a PhD.

Requirements

Key Requirements

Master's degree in natural sciences (Physics or related fields)
Desirable

- Hands-on experience with 2D materials, nanofabrication approaches (e.g., lithographies, microscopies) or optical spectroscopies (e.g., ultrafast or Raman spectroscopies)
- Scanning probe techniques; cryogenic techniques
- Building and developing an experimental setup from scratch
- Numerical simulations and computer programming (e.g., Python and LabVIEW)
- Developing back-of-the-envelope estimates for complex physical problems.

What we offer

Benefits and Other Advantages

- Modern workplace in the leafy suburb of Dahlem
- Salary in line with the collective agreement for the civil service at the state level (TV-L FU), plus additional one-off annual payment
- Thirty days of vacation (based on a five-day working week)
- Office closed on December 24 and December 31
- Numerous training and continuing education options for professional and personal development
- Opportunity to participate in University Sports Center courses and the health promotion program
- Discounted "Job Ticket" for public transportation
- Free use of the Freie Universität library system
- Employee discount in the cafeteria
- Exclusive deals for products and services through Corporate Benefits

Application

If you are interested in what we have to offer,

then you can send your application materials to us directly. Simply submit your application exclusively via our career portal by clicking the "Apply now" button. Unfortunately, we cannot consider applications by post or by e-mail.

You can also get in touch with Mr. Bolotin (bolotin@zedat.fu-berlin.de).

More information at <https://stellenticket.de/207554/BUA/>
Offer visible until 19/10/26

