



At the Department of Physics in the faculty of Mathematics and Natural Sciences of Heinrich Heine University Düsseldorf (HHU) a post as a

scientific employee (m/f/d)

(65,00 %, pay grade 13 TV-L)

is to be occupied starting 01.03.2023. The employment is limited until 31.12.2026. It is a qualification position in the sense of the Act of Academic Fixed-Term Contract (Wissenschaftsvertragsgesetz -WissZeitVG), which is to promote the scientific qualification of the employee.

The advertised project is integrated into CRC 1535 MibiNet “Microbial networking – from organelles to cross-kingdom communities” and the associated graduate research training group “MibiNet”. In addition to the HHU as the host university, CRC 1535 includes five cooperation partners, including the Research Center Jülich (FZJ), the Technical University of Aachen (RWTH), the University of Bielefeld, the University of Cologne and the Max Planck Institute for Plant Breeding Research (MPIPZ) in Cologne. Further job offers can be found on our homepage (www.sfb1535.hhu.de).

In our group for “Experimental Medical Physics” we develop novel optical and nanotechnological approaches to study biological processes down to the single-molecule level. In particular, we investigate how specific molecules and their interactions give rise to a signal in cells.

Currently, we are looking for a PhD student to further develop our multi-parametric image spectroscopy approaches to study the role of ferritin-like proteins for iron storage in cells. Our image spectroscopy approaches are based on STED microscopy and single molecule FRET measurements which enable quantification of molecular levels and their activity states in live cells. In this project, we will monitor ferritin-like proteins, which are an important storage of the trace element iron. Iron is essential for vital processes such as DNA biosynthesis or energy generation but iron also leads to radical formation and DNA damage when provided in excessive amounts. Here, we will develop tools to quantify the amount of ferritin-like proteins and iron in bacterial cells. We will compare different types of ferritins and show how intracellular iron pools are meticulously regulated to optimize bacterial growth and fitness. From our molecular sensitive image data we will eventually derive mechanistic models of the role of ferritin proteins for iron storage and availability.

Your tasks:

- Usage of biophysical and nanotechnological techniques, with focus on super-resolution microscopy and bioimage data analysis of single molecules
- further development of nanotechnological approaches

The studies will be conducted within the framework of the CRC Microbial Networks at HHU and will be supported by project partners at HHU and the Research Centre Jülich.

Our requirements:

- A completed scientific university education (M.Sc. / M.A. / Diploma / Magister) in the field of (bio-)physics, physical chemistry or nanotechnology
- Strong interest in interdisciplinary research
- Experience in optical microscopy and image data analysis is preferred

The pay scale grouping will be, depending on the personal qualification of the applicant, up to pay grade 13 TV-L.

In principle, the employment can also take place part-time, if no compelling official reasons are opposed in an individual case.

Heinrich Heine University Düsseldorf aims at increasing the percentage of employed women. Applications from women will therefore be given preference in cases of equal aptitude, ability and professional achievements unless there are exceptional reasons for choosing another applicant. Applications from suitably qualified severely disabled persons or disabled persons regarded as being of equal status according to Book IX of the German Social Code (SGB – Soziales Gesetzbuch) are encouraged.

Your contact person in case of questions is Dr. Lilli Bismar; email: sfb1535-application@hhu.de.

Please submit your application documents (cover letter, CV and certificates, additional references or resp. contact details) citing **reference no. 102.23 – 3.1** until **16.02.2023** preferably by email to

sfb1535-application@hhu.de

or in writing to:

Heinrich Heine University Düsseldorf
Faculty of Mathematics and Natural Sciences
Institute of Microbiology
Attn. Dr. Lilli Bismar
Build. 26.24.01
Universitätsstraße 1
40225 Düsseldorf



Please do not submit application materials in folders and be sure to send copies only, as documents will not be returned (they will be destroyed after the selection procedure has been completed).