

We are looking for a PhD student (m/f/d) on the topic "Superresolution microscopy at technical nanoscale structures and surfaces" to join our team for a cooperative research project between TU Braunschweig and PTB

Job Description

Novel optical characterization and measurement methods with unprecedented spatial resolution, reliability and application range are being developed and investigated with the aim of significantly exceeding fundamental limits of existing optical measurement methods. The aim of the PhD project is to investigate and develop novel marker-free super-resolution microscopy (SRM) techniques for metrological applications on nanoscale engineering structures and surfaces. Different approaches will be investigated to make SRM methods, so far mainly known from fluorescence microscopy, such as structured illumination microscopy (SIM) or pump-probe methods, usable for universal also technical applications and to exploit the potential for reliable optical nanometrology. The activities are embedded in the dynamic environment of various collaborative projects, such as the Cluster of Excellence *QuantumFrontiers*, the Research Training Group *NanoMet* and the EMPIR project *PoLight*.

Your Profile

- High motivation and very good university degree in physics or related subjects (Master or equivalent)
- Interest in and aptitude for developing and performing R&D work in the laboratory
- Ability to work independently and willingness to meet challenges
- Strong communication and teamwork skills, written and spoken English skills
- Willingness to work in an international research team
- Previous experience in one or more of the following areas:
 - Optics
 - Super-resolution microscopy
 - Nonlinear optics

Position

The position is to be filled as soon as possible on a part-time basis at 75% and is initially limited to 2 years. The employer is the TU Braunschweig. Afterwards, further employment at PTB is planned for initially one more year in the same project. Payment will be made up to EG 13 TV-L, depending on the assignment of tasks and fulfillment of personal requirements. Applications from people of all nationalities are welcome. The TU Braunschweig promotes professional gender equality. We strongly encourage female scientists in particular to apply for the advertised position. Application costs cannot be reimbursed. Personal data will be stored for the purpose of conducting the application process. Severely disabled applicants will be given preferential consideration in case of equal suitability. A respective proof is to be enclosed. Applications (including curriculum vitae) should be sent by e-mail to Prof. Dr. Stefanie Kroker or Dr. Bernd Bodermann (PTB) by **20.05.2022**.

Contact

Prof. Dr. Stefanie Kroker

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