Freie Universität Berlin - Fachbereich Physik - Institut für Experimentalphysik AG Kampfrath, Terahertz Physics Group

The "Terahertz Physics of Quantum Materials" research group investigates phenomena at extremely high frequencies in the so-called terahertz (THz) range of about 1 to 30 THz. This relatively unexplored frequency window overlaps with numerous elementary processes in condensed matter, such as lattice vibrations (phonons), spin waves (magnons), and the scattering of conduction electrons (momentum relaxation). To decode and even control the dynamics and coupling of these processes, we develop sensitive optical methods based on ultrashort electromagnetic fields in the THz range and optical laser pulses, combining these with near-field methods for improved spatial resolution. To better understand our results, we develop simple theoretical models. The insights gained are relevant for applications. For instance, bit rates and bandwidths in information technology are continuously approaching the THz range (e.g., in wireless networks and field-effect transistors). On the other hand, we utilize our findings directly for applications in THz photonics, e.g., for the construction of novel emitters, detectors, and modulators of THz radiation. More information can be found at: http://www.physik.fu-berlin.de/en/einrichtungen/ag/ag- kampfrath

Research assistant (praedoc) (m/f/d)

with 75% part-time job limited to 31.12.2029 salary grade (Entgeltgruppe) 13 TV-L FU
reference code: TRR_A05_Seifert_2026

City: Berlin; Starting date (earliest): At the earliest possible; Duration: befristet bis 31.12.2029; Remuneration: Entgeltgruppe 13 TV-L FU; Reference number: TRR_A05_Seifert_2026; Closing date: 05/01/26

Working field

The goal of this project is to specifically trigger dynamic changes of magnetic order and electron spin transport in spintronic nanostructures using ultrashort laser pulses, and to measure, understand, and ultimately control the resulting ultrafast dynamics with spatial resolution. This approach, paired with simple models, will provide new insights into the functioning of fundamental spintronic effects.
This project is part of the DFG Collaborative Research Center TRR227, Project A05.

Requirements

Requirements:
Completed university degree (Master’s) in Physics.
Desirable:
Experience in at least one of the following fields: Optics, solid-state physics, magnetism, spintronics, microscopy techniques with resolution in the nanometer range.

- Team spirit, perseverance, and enthusiasm for new ideas and topics.
- Very good command of English.
- Master’s thesis in Physics with excellent grades.
- Knowledge/experience in solid-state physics, magnetism, optics, spintronics, or

microscopy
techniques with resolution in the nanometer range.

Application

For further information, please contact Dr. Tom S. Seifert (tom.seifert@fu-berlin.de). Applications should be sent by e-mail, together with significant documents, indicating the **reference code, no later than January 05th, 2026** in PDF format (preferably as one document) to Dr. Tobias Kampfrath: b.selke-foelster@fu-berlin.de (Secretariat) or postal to

Freie Universität Berlin
Fachbereich Physik
Institut für Experimentalphysik
AG Kampfrath, Terahertz Physics Group
Dr. Tom S. Seifert
Arnimallee 14
14195 Berlin (Dahlem)

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More information at https://stellenticket.de/200216/BUA/
Offer visible until 05/01/26