

We invite applications for a

**PhD student Position,**

(fare based on german 2/3 E13 TV-L FU) in experimental solid-state physics, starting from February 1<sup>st</sup>, 2018 and limited to December 31<sup>st</sup>, 2021 within the new Collaborative Research Center/Transregio 227 on “Ultrafast Spin Dynamics”. The position is assigned to the workgroup of Prof. W. Kuch, which has experience investigating ultrathin magnetic films, surfaces, adsorbed molecules, and nanostructures that may become relevant in a future spin-based electronics. Experiments are carried out both by laboratory-based techniques as well as by using synchrotron radiation.

The spin dynamics in laterally magnetically inhomogeneous systems such as magnetic domain patterns and micro- or nanostructured samples is relevant for applications in magnetic data processing or spin electronics. In this PhD project lateral resolution from photoelectron emission microscopy with x-ray magnetic circular or linear dichroism as contrast mechanism is used to study the lateral propagation of an ultrafast excitation of the spin system by an infrared laser pulse. An important aspect are electronic as well as magnonic spin currents resulting from the temperature gradient on the sample after laser pulse excitation and how they interact with the local spin structure of the sample, for example with magnetic domain walls.

We provide excellent conditions for motivated experimentalists. Extensive equipment and state-of-the-art surface science analysis tools can be used. While sample preparation and characterization will be carried out at the Physics department of the Freie Universität, time-resolved measurements will be conducted at synchrotron radiation sources, for example at BESSY II in Berlin.

A master's degree is required with a master thesis in experimental physics or equivalent. We are seeking a motivated candidate with team spirit and ability for independent work. Experience in one or more of the following is of advantage: Magnetization dynamics, ultrafast pump–probe experiments, surface science, ultra-high vacuum, photoelectron microscopy (PEEM).

More information can be obtained from Prof. Dr. Wolfgang Kuch, e-mail: [magnetism@physik.fu-berlin.de](mailto:magnetism@physik.fu-berlin.de), Tel.: +49-30-838-52098, or at <http://www.physik.fu-berlin.de/~ag-kuch>.

Applications quoting the reference code **PhyKu\_04\_17** must include a complete CV, an abstract (max. one page) of the master thesis, as well as names and addresses (postal and e-mail) of two or three persons willing to provide confidential letters of reference. Only complete applications will be considered. Send your applications by e-mail or postal mail to be received not later than **January 08, 2018** to:

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The Freie Universität is an equal opportunity employer. Women are strongly encouraged to apply. Applicants with a disability are given preference in case of equal qualification.