



## PhD Program between the Freie Universität Berlin (FUB) and the China Scholarship Council (CSC)

### Open PhD position at FUB for CSC scholarship candidates 2017

*Please note: the PhD position is only offered to Chinese PhD candidates for application in the framework of the FUB-CSC PhD Program.*

<b><u>Department/Institute:</u></b>	Department of Physics/Institute of Experimental Physics
<b><u>Subject area:</u></b>	Solid State Physics/Magnetism
<b><u>Name of Supervisor:</u></b>	Prof. Dr. Wolfgang KUCH (Mr.)
<b><u>Number of open PhD positions:</u></b>	1
<b><u>Type of the PhD Study:</u></b>	Full-time
<b><u>Project title:</u></b>	Layered materials for spintronics

#### **PhD Project description:**

In a future spinelectronics, or spintronics, the spin of electrons is used for information transport and processing instead of the charge, as in conventional electronics. Expected advantages are smaller integration, less power consumption, and higher operating speed. Only recently, antiferromagnetic materials have moved into the center of interest. Antiferromagnets are less susceptible to external magnetic fields, can be operated at higher frequencies, and there is a larger number of semiconducting or insulating antiferromagnetic materials compared to ferromagnetic ones. Many open questions in this respect are related to the interaction between materials of different spin structure at their interface. In the project, the prospective PhD student will study such ultrathin layered materials important for spintronic applications. Fundamental structure-magnetism relations at the interface between single-crystalline materials will be explored down to the atomic scale. A large amount of state-of-the-art instrumentation is available for the study of well-defined structures prepared in ultra-high vacuum, like low-energy electron diffraction (LEED), conventional and spin-polarized room-temperature scanning tunneling microscopy (STM), as well as in-situ magneto-optical Kerr effect (MOKE).

#### **Language requirements:**

PhD study in English is possible.  
English: IELTS 6.5 or TOEFL 95 ibt.  
German: Test DaF or DSH 2

#### **Academic requirements:**

Master in physics with a master thesis in experimental physics.

#### **Information of the professor or research group leader:**

<http://www.physik.fu-berlin.de/einrichtungen/ag/ag-kuch/research>

#### **Please note:**

In a first step the complete application should be submitted to the Beijing Office for evaluation by January 4<sup>th</sup>, 2017. Please don't contact the professor before. He/She will get in contact with you after having received the complete application in January.