

The Leibniz Institute for Solid State and Materials Research Dresden – in short IFW Dresden – is a non-university research institute and a member of the Leibniz Association. The IFW employs approximately 600 people and one focus is on the training of young scientists besides enhancing fundamental and applied research development. At the highest international level, the IFW operates modern materials science on a scientific basis and makes the obtained results useful for the economy. The complex and interdisciplinary research work is carried out within the IFW by five scientific institutes, which are supported by a highly developed technical infrastructure. The IFW supports its employees in reconciling work and family life and regularly submits to the berufundfamilie® audit. Further information at: <http://www.ifw-dresden.de>.

The Institute for Solid State Research at the IFW Dresden offers a

PhD Position in Electron Spin Resonance and Magnetometry on Magnetic Topological Materials (m/f/d)

starting as soon as possible.

The Research Team “Magnetic Properties” at the Institute for Solid State Research, IFW Dresden, is currently looking for an excellent student to fill a Doctoral Researcher Position in electron spin resonance (ESR) spectroscopy on magnetic topological materials and complementing static magnetometry studies. The position will remain open until filled.

Since the discovery of topological insulators featuring symmetry protected metallic states at the surface, there is an ever-growing interest in exploring the interplay between magnetism and electronic topological surface states, which can give rise to exotic topological states of matter, such as the quantum anomalous Hall state, the axion insulator state, and magnetic Weyl and nodal lines semimetals.

The aim of the doctoral research is an experimental study of magnetic properties of a new emerging class of materials, the layered magnetic van der Waals (vdW) compounds that feature both a non-trivial electronic topology and intrinsic magnetism. The main focus will be on ESR spectroscopy at sub-THz frequencies and strong magnetic fields and its combination with electrical transport, in particular electrically detected ESR. These studies will be complemented by comprehensive magnetic characterization of materials by static magnetometry methods. In parallel, the electronic structure of the vdW magnets will be studied by angle resolved photoemission spectroscopy, which will make possible to assess correlations between the observed static and dynamic magnetic properties and the topological surface band structure.

This doctoral research project will be a part of the recently established Dresden-Würzburg Center of Excellence - Complexity and Topology in Quantum Matter (ct.qmat): <https://www.physik.uni-wuerzburg.de/ctqmat/tqmcenter/>.

The doctoral student will be embedded in the exciting most active research environments on topological condensed matter physics worldwide - the Technische Universität Dresden together with its external research institutes (Helmholtz-Zentrum Dresden-Rossendorf, Leibniz IFW Dresden, Max Planck Institutes MPI PKS and MPI CPfS) and the Julius-Maximilians-Universität Würzburg.

We expect from the successful candidate a Master's degree in Physics (a background in Solid State Physics and in ESR is beneficial) as well as high motivation, creativity, and an enthusiastic interest in experimental research. Very good communication skills in English are a further expectation.

The employment contract is limited to 36 months with the possibility of renewal. The remuneration is based upon the TV-L rules (EG 13, 50%).

The IFW would like to increase the proportion of women in science. Qualified women are therefore explicitly invited to apply. Severely disabled applicants (m/f/d) are given preferential treatment if they have the same qualifications.

If you are interested in the position, please send your application including a CV, a motivation letter describing the research career goals, skills and experience, copies of certificates and the names and contact details of two references citing the **reference number (DM1009-2/19)** as a single pdf file (other formats will not be accepted) to:

bewerbung@ifw-dresden.de.

For further information please contact Dr. Vladislav Kataev at v.kataev@ifw-dresden.de and Dr. Kavita Mehlawat at k.mehlawat@ifw-dresden.de.