



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>.

PhD position (m/f/d) in the field of quantum magnetism

The Institute for Theoretical Solid State Physics (ITF) of the Leibniz Institute for Solid State and Materials Research (IFW Dresden) offers a PhD position in the field of quantum magnetism starting as early as possible.

The main focus of this work is on the proximate quantum spin liquid candidates on a honeycomb lattice, especially transition metal oxides and trichlorides which are known to exhibit anisotropic magnetic interactions. The emphasis of the project will be to understand the effects of different types of disorder on the electronic and magnetic properties of this materials class. For this, the candidate (m/f/d) is expected to carry out density functional theory (DFT) and exact diagonalization (ED) / density matrix renormalization group (DMRG) calculations and compare with the experiments, as well as participate extensively in the collaboration with the experimental and theoretical groups within the scope of the project. Therefore, self-motivated candidates (m/f/d) with prior exposure to one or more of these computational techniques and ability to work effectively in a team are sought.

Your Profile:

Potential candidates (m/f/d) should hold a Masters or Diploma degree in Physics or Materials Science and must show strong knowledge in solid state physics, statistical physics, and advanced quantum mechanics. The candidate (m/f/d) should be self-motivated and interested to work independently in numerical/computational solid state physics.

Preferably, the applicant (m/f/d) has also experience in one or more of the following topics, along with a strong programming skills (Fortran/Python/C++): Density Functional Theory (DFT), Exact diagonalization, Density Matrix Renormalization Group (DMRG).

We are looking for a candidate (m/f/d) with pronounced initiative, creativity, ability to work effectively in a team, as well as fluency of written and spoken English.

We offer:

The salary will be based upon the TV-L rules (TV-L E13, 50 %). The contract will be limited to 12 months for the beginning. An extension by another 2 years is intended upon a successful mid-term evaluation. PhD candidates are facilitated to participate in the PhD program to successfully complete their dissertation. We offer an attractive work place with excellent facilities and environment in Dresden.

The institute promotes the professional equality between all genders. In science, the IFW Dresden would like to increase the proportion of woman. Qualified women are therefore explicitly invited to apply. Equally qualified handicapped applicants (m/f/d) will be given preference.

If you are interested in the position, please send your application including CV, motivation letter describing the research career goals, skills and experience, copies of certificates citing the reference number **024-21-5200 as a single pdf file** (other formats will not be accepted) to the following email-address

bewerbung@ifw-dresden.de.

The application for this position should be submitted by **February 7, 2021**.

If you have further questions on the position please contact: Dr. Rajyavardhan Ray (r.ray@ifw-dresden.de).