



ESR8

## PhD position (m/f/d) at Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden e. V. (IFW)

**Project Title:** Magneto-ionic and electric surface charging effects in ferromagnetic nano-objects with different shapes and at critical points.

**Objectives:** Electrochemical growth of magnetic nanowires (Fe, Co, Ni, etc.); growth of FePt (and related ternary alloys) or CoFeB nanoislands by electrodeposition and physical vapor deposition + e-beam lithography; performing in-situ magneto-transport, ferromagnetic resonance and MOKE measurements in liquids to voltage-tune (i) the magnetic easy axis and (ii) the magnetoresistance of these nano-objects via electric surface charging and magneto-ionic effects (via redox reactions).

**Expected results:** Magneto-ionic switching between superparamagnetic and ferromagnetic states as well as between different magnetic configurations (single-domain, flower, vortex, etc.) in nanowires and lithographed nano-islands; tuneable magnetoresistance and tuneable effective anisotropy (i.e., easy axis) by voltage, in view of memory applications (e.g., voltage-controlled tunnel junctions for ME-RAMs).

The Leibniz Institute for Solid State and Materials Research Dresden e. V. – 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>. An international and interdisciplinary research team lead by Dr. Karin Leistner will conduct synthesis and characterization of biocompatible magnetoelectric and magneto-ionic nanostructures and thin films (<https://www.ifw-dresden.de/de/ifw-institute/imw/research/magnetic-and-ferroic-materials/#c7965>).

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 will be given preference.

BeMAGIC project is a **Marie Skłodowska-Curie Innovative Training Network** that offers the possibility to pursue the PhD within the Network at different universities/research centres/companies across Europe. The duration of the appointment is 3 years, starting in March 2020. Highly competitive and attractive salary is offered (it meets the EU Marie Skłodowska-Curie standards), plus mobility and family allowances as applicable. Importantly, the Marie Curie eligibility criteria must be respected. Eligible early-stage researchers (ESRs) are those who are, at the date of recruitment by the host institution, in the first four years (full-time equivalent) of their research careers. This is measured from the date when they obtained the degree which would formally entitle them to embark on a doctorate. In addition, researchers must not have resided or carried out their main activity (work, studies, etc.) in the country of the host organization for more than 12 months in the 3 years immediately prior to their recruitment. Researchers can be nationals of any country (including all countries outside Europe).

**Application procedure:** Interested applicants should apply until 31.12.2019 via the BeMAGIC website: <https://bemagic-etn.eu/project/offered-esr-positions>.