

## External job advertisement Reg.-no. 5-5555/21-D

The Martin Luther University Halle-Wittenberg, Faculty of Natural Sciences II, Institute of Physics, offers a temporary positions (36 months) in the framework of the EU-funded Innovative Training Network „Spin-orbit Materials, Emergent Phenomena and Related Technologies Training“ (SPEAR-ITN) (subprojects IRP9 "Search for efficient spin-to-charge conversion based on the Edelstein effect" and IRP10 "Optimization of the skyrmion motion for racetrack applications") starting 01.09.2021 (possibly sooner after prior consultation) as a

### Early stage researcher (doctoral candidate)

on a full-time basis.

Employment is as an "Early stage researcher" according to the regulations of the Marie Curie Innovative Training Networks (ITN) of the EU within the ITN "Spin-orbit Materials, Emergent Phenomena and Related Technologies Training". The amount of the allowance is based on the requirements of the Marie Curie Grant Agreement and the Horizon 2020 - Marie Skłodowska-Curie Actions Work Programme and includes a living and a mobility allowance, if applicable also a family allowance. For more information see also

[http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014\\_2015/main/h2020-wp1415-msca\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/main/h2020-wp1415-msca_en.pdf)

#### Work tasks:

- Ab-initio electronic structure calculations for two-dimensional electron gases
- Tight binding fit of the band structures
- Investigation of the spin-orbit interaction to transport properties of metallic systems
- Simulation of the spin-to-charge conversion for two-dimensional electron gases based on the Edelstein effect
- Prediction of non-collinear spin textures based on the Heisenberg Hamiltonian
- Investigation of the motion of spin textures in external fields by means of the Thiele equation
- Investigation of the electron motion in the emergent field of the spin textures
- Calculation of the transversal transport coefficients

#### Prerequisites:

- Studies in physics
- Experience in quantum theory of solids
- Experience in theory of magnetism
- Experience in transport theory
- Fulfilment of the criteria for an "early stage researcher", i.e. no doctorate and at the time of selection/hiring less than 4 years of research experience (full-time equivalent) following the degree qualifying for a doctorate.
- At the time of recruitment, the "Early stage researcher" must not have been resident in Germany for more than 12 months during the 3 years immediately preceding the recruitment or have pursued his/her main activity there.
- Motivation to learn the German language for integration into the new working environment
- For further details see <https://spear-itn.eu/open-positions/>

Applications from severely disabled persons will be given preferential consideration in the case of equal suitability and ability. Women are strongly encouraged to apply.



Willingness to be mobile within the network is a prerequisite. Prior to a possible appointment, a check of the recruitment requirements will be carried out.

If you have any questions, please contact Prof. Dr. Ingrid Mertig at the following e-mail address: [ingrid.mertig@physik.uni-halle.de](mailto:ingrid.mertig@physik.uni-halle.de).

Please submit your application by 31.05.2021 exclusively online via the project website <https://spear-itn.eu/open-positions/> stating the reg. no. 5-5555/21-D with the usual documents.

The tender is subject to possible budgetary restrictions.

Application costs are not reimbursed by Martin Luther University.