

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG



Two PhD positions in low temperature transport physics

The PhD positions are located in the group for nanostructured materials of Prof. Georg Schmidt at the institute of Physics of Martin-Luther-Universität, Halle-Wittenberg.

The two research projects will investigate low temperature magnetotransport in all oxide heterostructures. One PhD student will investigate tunneling and anisotropic tunneling magnetoresistance in oxide stacks based on ferromagnetic, insulating, and ferroelectric oxides. The second PhD student will investigate transport in $\text{LaAlO}_3/\text{SrTiO}_3$ 2D electron gases nano-patterned using a new process recently developed in Halle.

All structures are deposited by pulsed laser deposition and patterned by electron beam lithography and dry etching. Transport measurements are done at low temperature down to the mK-regime in magnetic fields. The projects are related to the SFB762 on functionality of oxide interfaces. The work includes the sample fabrication and characterization.

The group for nanostructured materials focusses on spin transport, spin dynamics, novel materials and high resolution lithography. Sample fabrication is done in the cleanroom facilities of the university (200 m²/class 100, 400 m²/class 10000) where all necessary state-of-the-art equipment is available for thin film deposition and nano-patterning.

Applicants should have an excellent master's degree or diploma in physics (or an equivalent qualification). Experience in PLD, electron beam lithography and transport measurements are preferred but not mandatory.

The half time positions (50%) which should start as soon as possible are initially limited to three years but may be extended up to four years. The salary will be determined up to pay grade 13 TV-L (50%) depending on the assigned tasks and personal qualifications.

Applications and informal inquiries should be sent by e-mail to georg.schmidt@physik.uni-halle.de

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