Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

1919 2019
100 JAHRE WISSENSWERFT
Universität Hamburg

The Faculty of Mathematics, Informatics and Natural Sciences / Department of Physics / Institute for Nanostructure and Solid State Physics invites applications for a

RESEARCH ASSOCIATE FOR THE PROJECT "OXIDE NANOELECTROMECHANICAL SYSTEMS FOR ULTRASENSITIVE AND ROBUST SENSING OF BIOMAGNETIC FIELDS" (OXINEMS)

- SALARY LEVEL 13 TV-L -

The position in accordance with Section 28 subsection 3 of the Hamburg higher education act (Hamburgisches Hochschulgesetz, HmbHG) commences on as soon as possible.

This is a fixed-term contract in accordance with Section 2 of the academic fixed-term labor contract act (Wissenschaftszeitvertragsgesetz, WissZeitVG). The term is fixed for a period of 3 years. The position calls for 66 % of standard work hours per week**.

RESPONSIBILITIES:

Duties include academic services in the project named above. Research associates may also pursue independent research and further academic qualifications.

SPECIFIC DUTIES:

OXiNEMS is a cooperative project within the framework of the European Union Horizon 2020 FETOPEN program with the aim to develop a new class of nanoelectromechanical systems based on integrated multifunctional oxides. Particularly, a nanomechanical sensor suitable to detect ultralow magnetic fields in the femto-Tesla regime will be developed.
The Hamburg team - consisting of Dr. Alexander Schwarz as project leader, a Postdoc and you (plus additional BSc- and MSc students) - is mainly responsible for device characterization and modelling of device performance. The device itself will consist of a superconducting field-to-gradient-converter and an integrated nanomechanical oscillator. The mechanical response of the oscillator to the presence of an external magnetic field will be read-out optically.
Initial characterization will be performed by Magnetic Force Microscopy at cryogenic temperatures. In a next step, a specific test stage operating at cryogenic temperatures has to be designed and constructed.

* Full-time positions currently comprise 39 hours per week.

REQUIREMENTS:

A university degree in a relevant field. It could a diploma or MSc in, e.g., physics, material sciences or nanosciences. Experience in one (or more) of the following fields would be great:

- Scanning Probe Techniques (particularly Magnetic Force Microscopy)
- Oxide Materials
- Superconductivity
- Cryogenic Instrumentation
- Optomechanics
- Modelling (particularly Finite Element Analysis)

Further, a willingness to cooperate and communicate in an international multidisciplinary project is expected as well as a dedication to push fundamental science forward into application.

The University aims to increase the number of women in research and teaching and explicitly encourages women to apply. Equally qualified female applicants will receive preference in accordance with the Hamburg act on gender equality (Hamburgisches Gleichstellungsgesetz, HmbGleiG).

Qualified disabled candidates or applicants with equivalent status receive preference in the application process.

For further information, please contact Alexander Schwarz (see email address below) or consult our website at

http://www.spin.cnr.it/index.php/news-events/item/56-oxinems-h2020-fet-open.htm

or

https://www.physnet.uni-hamburg.de/forschung/solid_nano/oxinems.htm.

Applications should include a cover letter, a tabular curriculum vitae, and copies of degree certificate(s). Please send applications by 01.10.2019 to: aschwarz@physnet.uni-hamburg.de.

Please do not submit original documents as we are **not** able to return them. Any documents submitted will be destroyed after the application process has concluded.