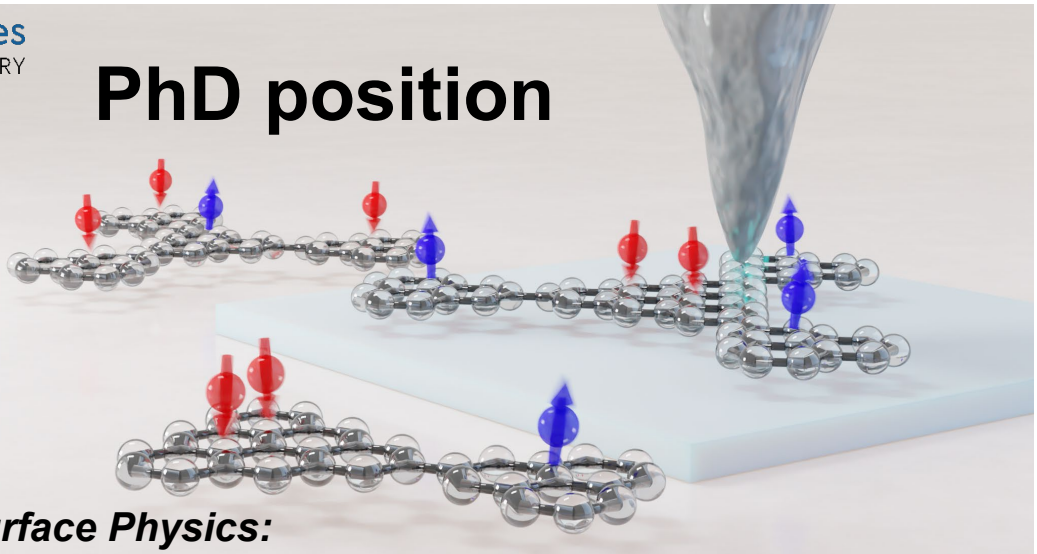
nanotech surfaces LABORATORY

PhD position



in Experimental Surface Physics:
Bottom-up design and exploration of π-electron quantum magnetism

Empa is the research institute for materials science and technology of the ETH Domain and conducts cutting-edge research for the benefit of industry and the well-being of society.

Our ***nanotech@surfaces Laboratory*** is offering a

PhD Position in Scanning Probe Investigation of Carbon-based Quantum Spin Systems.

We are looking for highly motivated and talented candidates with a strong experimental background in Solid State Physics, Surface Science or Physical Chemistry to take up a challenging PhD position in the area of low-dimensional carbon nanomaterials. This PhD project focuses on the on-surface synthesis of magnetic nanographenes with chemically controlled exchange coupling strengths and their characterization under ultrahigh vacuum conditions using state-of-the-art scanning probe methods such as scanning tunneling microscopy/spectroscopy and non-contact atomic force microscopy.

The successful candidate will interact closely with an interdisciplinary consortium of four research groups (Empa, ETH Zurich, University of Zurich and the International Iberian Nanotechnology Center (Portugal)) bringing together expertise in synthetic chemistry, surface physics and chemistry, advanced scanning probe methods and theory.

Your main tasks will be

- fabrication of specific magnetic nanographenes using on-surface synthesis
- investigation of their electronic and magnetic properties using scanning tunneling microscopy/spectroscopy and atomic force microscopy
- decoupling of the magnetic nanographenes using thin insulating layers such as NaCl and MgO to investigate their intrinsic properties.

Required qualifications include a Master's Degree in Physics or Physical Chemistry. A solid background in Surface Science and previous experience using scanning probe methods or other ultrahigh vacuum surface analysis equipment would be significant benefits. Very good communication skills in English are essential. The position is available upon agreement with a planned duration of 4 years.

We offer a challenging position in a materials research institution in the Zurich area with outstanding infrastructure, broad interdisciplinary surroundings and competitive salaries. For more information, please visit our website www.empa.ch/nanotech@surfaces or contact Dr. Pascal Ruffieux, pascal.ruffieux@empa.ch.

Empa – Swiss Federal Laboratories for Materials Science and Technology
Überlandstrasse 129
8600 Dübendorf

Empa
Materials Science and Technology