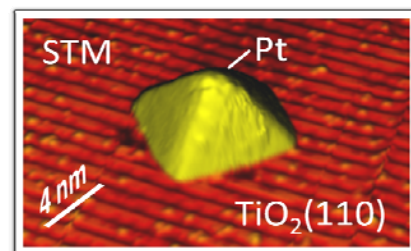


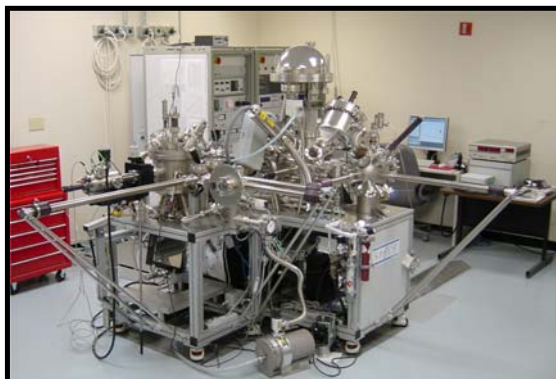
**PhD Position: Solid State/Surface Physics:
Structural, Electronic, Magnetic, and
Vibrational Properties of Nanostructures**

PROF. DR. BEATRIZ ROLDAN CUENYA
Phone: +49 (0)234 32-23649
Fax: +49 (0)234 32-14173
beatriz.roldan@rub.de
www.ep4.rub.de/Roldan

There are several open PhD positions for students interested in the research fields of solid state and surface physics in the Institute of Experimental Physics IV at the Ruhr Universität Bochum. The successful applicant will investigate the novel size- and shape-dependent physical properties of metal nanostructures. Emphasis will be given to: (i) studying the magnetic properties of nearly 1D and 0D systems, (ii) monitoring size-dependent changes in the electronic properties of nanoscale systems, and (iii) getting insight into the vibrational dynamics of low dimensional systems.



State-of-the-art experimental techniques are available in Dr. Roldán's laboratory for these projects: Atomic and Magnetic Force Microscopy (AFM, MFM), Scanning Tunneling Microscopy (STM), Scanning Electron Microscopy (SEM), X-ray Photoelectron Spectroscopy (XPS), Auger Electron Spectroscopy (AES), Ultraviolet Photoelectron Spectroscopy (UPS), Low Energy Electron Diffraction (LEED), X-ray Diffractometry (XRD), *in-situ* and *ex situ* Magneto-Optic Kerr Effect (MOKE), Vibrating Sample Magnetometer (VSM), Superconducting Quantum Interference Device (SQUID), and Molecular Beam Epitaxy (MBE). Furthermore, the selected candidates will also have access to synchrotron based measurement techniques at European and international user facilities, including nuclear resonant inelastic X-ray scattering (NRIXS), X-ray absorption fine structure spectroscopy (XAFS), grazing incidence small angle X-ray scattering (GISAXS), as well as ambient pressure XPS.



Required qualifications include a Master or BS in Physics, Physical Chemistry, or Materials Science and Engineering. Previous experience using any of the techniques mentioned above is not required but would be of benefit.

Interested applicants should send their curriculum vitae and the names and contact information for three references by email as PDFs to: **beatriz.roldan@rub.de**.