Martyna Sedlmayr née Polok

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EDUCATION

2012 - Present — **Karlsruhe Institute of Technology**, Karlsruhe, Germany
Phd in Institute of Microstructure Technology

Topic: Development of automated High Density Peptide Microarray Reprocessing Device for Purity and Synthesis Support (HD Pep-PASS)

Methods: microarray technology, peptide arrays for antibody assays, Atomic Force Microscopy (AFM), Phase Shift Interferometry (PSI)

2013 – 2014 — **University of Pierre and Marie Curie (UPMC)**, Paris, France
Placement in Laboratoire de Réactivité de Surface
Topic: Protein adsorption process on gold surfaces functionalized with peptides using AFM, XPS, PM-IRRAS

2004 – 2005 — **Martin Luther University Halle-Wittenberg**, Germany
"Socrates-Erasmus" international exchange program
Continuation of physics studies

2004 - 2005 — **Max Planck Institute of Microstructure Physics**, Halle, Germany
Master thesis on exchange bias effect in the Co/NiMn Cu(001) films
Topic: Low dimensional magnetic structures
Methods: Molecular Beam Epitaxy (MBE), Scanning tunneling microscopy (STM), medium energy electron diffraction (MEED), Auger electron spectroscopy (AES), X-ray photoemission spectroscopy (XPS), Magneto-optic Kerr effect (MOKE)

2000 – 2005 — **AGH University of Science and Technology**, Cracow, Poland
Completed studies in the field of Technical Physics
Final grade: **"very good"**

EMPLOYMENT

2011 — **Ulm University Medical Center (Bundeswehr Institute of Radiobiology in Munich)**, Germany
Topic: DNA damage and repair of irradiated leukocytes

2009 — **Solexant Corp.**, San Jose, California, USA
Intern at the Research & Development unit
Topic: Commercial photovoltaics methods: AFM, contact angle

2005 - 2010 **Martin Luther University Halle-Wittenberg**, Germany
Scientific co-worker
Topic: Electronic transport over magnetic single atom junctions
Methods: Density Functional Theory (DFT), Korringa-Kohn-Rostoker (KKR) method for computing electronic structure of solids, calculation of conductance, Landauer–Büttiker theory

SKILLS

Languages
English (excellent)
German (advanced)
French (beginner)
Polish (native speaker)

PUBLICATIONS

1. "High-flexibility combinatorial peptide synthesis with laser-based transfer of monomers in solid matrix material"
   F. Loeffler, F. Foertsch, T. C. Popov, R. Mattes, D.S. Schlageter, M. Sedlmayr, et al.
   Nature Communications, **7**, (2016)
2. "Particle-Based Microarrays of Oligonucleotides and Oligopeptides Microarrays"
   A. Nesterov-Mueller, F. Maerkle, L. Hahn, T. Foertsch, S. Schillo, V. Bykovskaya, M. Sedlmayr, et al.
   Microarrays, **3***,* 245 (2014)
3. "Evaluation of conduction eigenchannels of an adatom probed by an STM tip"
   M. Polok, D.V. Fedorov, A. Bagrets, P. Zahn, and I. Mertig
   Physical Review B, **83**, 245426 (2011)

ACHIEVEMENTS & INTERESTS

2013 Karlsruhe House of Young Scientists (KHYS) Research Travel Grant
2008 1st place (in a team) in the Nano-Entrepreneurship-Academy (NEnA)
2008 Co-organizer of the Nano-IMPRS Workshop on "Advances in Science and Technology of Nanostructures", 3rd -4th June 2008, Halle
2007-2008 "HERAEUS" Wilhelm and Else Heraeus Foundation Program of the German Physical Society
2005 Rotary Foundation International Award
2004 Scholarship of the Socrates-Erasmus International Exchange Program
2003-2004 Gilded Youth Scholarship founded by Silesian Region
2003-2004 Member of BEST (Board of European Students of Technology)
Finland (Tampere, August 2003), Sweden (Göteborg, January 2004) and France (Grenoble, September 2004)