

AG Kuch
Scientific Activity Report 2010

Scientists:

Bernien, Matthias

Chang, Yin-Ming (since 21.10.)

Hermanns, Ch. Felix

Khan, Yaqoob

Krüger, Alex

Kuch, Wolfgang

Kurde, Julia

Miguel, Jorge (until 30.04.)

Sandow, Barbara (until 31.03. and since 01.10.)

Stampe, Miriam (until 30.06.)

Wu, Chii-Bin (since 14.09.)

Zhang, Bin (since 03.10.)

Bachelor, Master, and Diploma students:

Jackel, Simon (since 11.01. until 15.03.)

Kalbe, Henryk (since 09.08. until 11.10.)

Nickel, Fabian (since 04.11.)

Pomaska, Manuel (since 23.08. until 25.10.)

Sarihan, Menekse (until 23.02.)

Stoll, Paul (until 01.02.)

Yamamoto, Kenji (since 25.05. until 27.07.)

Publications:

M. Charilaou, K. Lenz, and W. Kuch
Spin-pumping-enhanced magnetic damping in ultrathin Cu(001)/Co/Cu and Cu(001)/Ni/Cu films

J. Magn. Magn. Mater. **322**, 2065–2070 (2010).

W. A. A. Macedo, P. L. Gastelois, M. D. Martins, W. Kuch, J. Miguel, and M. Y. Khan
Growth, structure, and magnetic properties of epitaxial Ni_xMn_{100-x} single layers and Co/Ni_xMn_{100-x} bilayers on Cu₃Au(100)

Phys. Rev. B **82**, 134423-1–8 (2010).

K. M. Seemann, Y. Mokrousov, A. Aziz, J. Miguel, F. Kronast, W. Kuch, M. G. Blamire, A. T. Hindmarch, B. J. Hickey, I. Souza, and C. H. Marrows

Spin-Orbit Strength Driven Crossover between Intrinsic and Extrinsic Mechanisms of the Anomalous Hall Effect in the Epitaxial L1₀-Ordered Ferromagnets FePd and FePt

Phys. Rev. Lett. **104**, 076402-1–4 (2010).

M. Stampe, P. Stoll, T. Homberg, K. Lenz, and W. Kuch

Influence of ferromagnetic–antiferromagnetic coupling on the antiferromagnetic ordering temperature in Ni/Fe_xMn_{1-x} bilayers

Phys. Rev. B **81**, 104420-1–6 (2010).

Presentations:

a) invited talks

M. Bernien

X-Ray Absorption Spectroscopy of Fe Complexes on Surfaces: Electronic Interactions and Tailoring of the Magnetic Coupling

DPG Spring Meeting 2010 of the Condensed Matter Section, Regensburg, 21.–26.03.2010.

M. Bernien

Gaining control on magnetic properties of adsorbed metalloporphyrins

First German-Russian Interdisciplinary Workshop on the Structure and Dynamics of Matter, Berlin, 18.–20.10.2010.

W. Kuch

Adsorbed paramagnetic molecules

Workshop „MESOMAG“, Grenoble (France), 27.–28.05.2010.

W. Kuch

X-ray spectroscopic investigations of adsorbed switchable molecules

Max-Planck-Institut für Mikrostrukturphysik, Halle, 19.07.2010.

W. Kuch

X-ray spectroscopic investigations of adsorbed switchable molecules

National Taiwan University, Taipei (Taiwan), 27.09.2010.

W. Kuch

Controlling the magnetization of magnetic molecules on surfaces

Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden, 11.11.2010.

W. Kuch

Magnetic properties of antiferromagnetic/ferromagnetic thin film systems and paramagnetic molecules adsorbed on ferromagnetic thin films

Technische Universität Chemnitz, 07.12.2010.

B. Sandow

Promoting Positive Images of Women in Physics

National Sun Yat-Sen University, Kaohsiung, Taiwan, 31.10.2010

B. Sandow

Electron Transport through Molecular Junctions

National Taiwan University, Taipei, Taiwan, 01.11.2010

b) contributed talks

W. Kuch, M. Bernien, J. Miguel, C. Weis, Ch. F. Hermanns, A. Krüger, J. Kurde, M. Piantek, B. Krumme, K. Baberschke, and H. Wende

Controlling the magnetic coupling of metalloporphyrins to ferromagnetic films

Joint European Magnetic Symposia (JEMS) 2010, Krakow (Poland), 23.–28.08.2010

W. A. A. Macedo, W. Kuch, P. L. Gastelois, J. Miguel, M. D. Martins, and M. Y. Khan

Search for exchange bias in Co/Ni₅₀Mn₅₀ bilayers epitaxially grown on Cu₃Au(100)

Joint European Magnetic Symposia (JEMS) 2010, Krakow (Poland), 23.–28.08.2010

W. A. A. Macedo, W. Kuch, P. L. Gastelois, J. Miguel, M. D. Martins, and M. Y. Khan

Growth, structure and magnetism of NiMn monolayers and Co/NiMn bilayers grown on Cu₃Au(100)

IX Brazilian MRS Meeting 2010, Ouro Preto (Brazil), 24.–28.10.2010.

M. Stampe, P. Stoll, T. Homberg, K. Lenz, and W. Kuch

Influence of ferromagnetic–antiferromagnetic coupling on the antiferromagnetic ordering temperature in Ni/Fe_xMn_{1-x} bilayers

DPG Spring Meeting 2010 of the Condensed Matter Section, Regensburg, 21.–26.03.2010.

c) posters

M. Bernien, J. Miguel, C. Weis, Md. E. Ali, J. Kurde, B. Krumme, P. M. Panchmatia, B. Sanyal, M. Piantek, K. Baberschke, P. M. Oppeneer, O. Eriksson, W. Kuch, and H. Wende

Antiferromagnetische Kopplung von paramagnetischen Porphyrinmolekülen zu ferromagnetischen Substraten

Deutsche Tagung für Forschung mit Synchrotronstrahlung, Neutronen und Ionenstrahlen an Großgeräten (SNI 2010), Berlin, 24.–26.02.2010.

- M. Bernien, J. Miguel, W. Kuch, A. D. Ward Cherrier, C. Tieg, C. Weis, C. Antoniak, D. Bovenschen, and H. Wende
Magnetic anisotropy of paramagnetic porphyrin molecules on non-magnetic surfaces: an angle-dependent XMCD investigation
DPG Spring Meeting 2010 of the Condensed Matter Section, Regensburg, 21.–26.03.2010.
- D. Brossell, O. Pfoch, and B. Sandow
Electron Transport through Molecular Junctions
DPG Spring Meeting 2010 of the Condensed Matter Section, Regensburg, 21.–26.03.2010.
- M. Charilaou, K. Lenz, and W. Kuch
Spin-pumping-enhanced magnetic damping in ultrathin Cu/Co/Cu films
17th International Symposium on Metastable, Amorphous and Nanostructured Materials (ISMANAM 2010), Zurich (Switzerland), 04.–09.07.2010.
- F. Hermanns, A. Krüger, M. Bernien, J. Miguel, and W. Kuch
Magnetic coupling of Co porphyrin molecules to ferromagnetic substrates
DPG Spring Meeting 2010 of the Condensed Matter Section, Regensburg, 21.–26.03.2010.
- A. Krüger, M. Piantek, M. Bernien, F. Hermanns, J. Miguel, K. Hermann, and W. Kuch
Substrate- and temperature-dependent adsorption studies of azobenzene molecules
DPG Spring Meeting 2010 of the Condensed Matter Section, Regensburg, 21.–26.03.2010.
- J. Kurde, J. Miguel, D. Bayer, J. Sánchez-Barriga, A. Rzhevskiy, L. Tati-Bismaths, F. Kronast, M. Aeschlimann, H. A. Dürr, and W. Kuch
Magnetic coupling mechanisms in trilayer microstructures
Deutsche Tagung für Forschung mit Synchrotronstrahlung, Neutronen und Ionenstrahlen an Großgeräten (SNI 2010), Berlin, 24.–26.02.2010.
- J. Kurde, J. Miguel, D. Bayer, J. Sánchez-Barriga, L. Tati Bismaths, M. Aeschlimann, H. A. Dürr, and W. Kuch
Imaging of magnetic coupling in trilayered microstructures
DPG Spring Meeting 2010 of the Condensed Matter Section, Regensburg, 21.–26.03.2010.
- J. Kurde, J. Miguel, D. Bayer, L. Tati Bismaths, J. Sánchez-Barriga, F. Kronast, M. Aeschlimann, H.A. Dürr, W. Kuch
Magnetic Trilayer Systems: Static and Dynamic Properties
International Workshop on X-ray Spectroscopy of Magnetic Solids (XRMS 2010), Didcot (U.K.), 10.–11.06.2010.
- J. Kurde, J. Miguel, D. Bayer, J. Sánchez-Barriga, F. Kronast, M. Aeschlimann, H.A. Dürr, W. Kuch
Precession modes in magnetic trilayers: A micromagnetic domain wall study
International Workshop on Spin Dynamics in Nanomagnets, Mülheim, 18.–20.10.2010.
- J. Miguel, M. Bernien, W. Kuch, A. D. Ward Cherrier, C. Tieg, C. Weis, C. Antoniak, D. Bovenschen, and H. Wende
Magnetic anisotropy of paramagnetic porphyrin molecules on non-magnetic surfaces: An angle-dependent XMCD investigation
International Workshop on X-ray Spectroscopy of Magnetic Solids (XRMS 2010), Didcot (U.K.), 10.–11.06.2010.

M. Piantek, G. Schulze, J. Miguel, K. J. Franke, A. Krüger, C. Navío, M. Bernien, W. Kuch, and J. I. Pascual

Ring opening reaction of spiropyrene on a Au(111) surface

Fuerzas y Túnel 2010, Tarrogon (Spain), 27.–29.09.2010.

K. M. Seemann, Y. Mokrousov, A. Aziz, J. Miguel, F. Kronast, W. Kuch, M. G. Blamire, A.

T. Hindmarch, B. J. Hickey, I. Souza, and C. H. Marrows

Intrinsic And Extrinsic Anomalous Hall Effect In The Epitaxial $L1_0$ -Ordered Ferromagnets FePd And FePt

2010 IEEE 7th International Symposium on Metallic Multilayers, Berkeley (U.S.A.), 19.–24.09.2010.

M. Stampe, P. Stoll, T. Homberg, K. Lenz, and W. Kuch

Influence of FM–AFM coupling on the antiferromagnetic ordering temperature in

Ni/Fe_xMn_{1-x} bilayer

Joint European Magnetic Symposia (JEMS) 2010, Krakow (Poland), 23.–28.08.2010.

M. Stampe, P. Stoll, T. Homberg, K. Lenz, and W. Kuch

Influence Of Ferromagnetic–Antiferromagnetic Coupling On The Antiferromagnetic Ordering Temperature In Ni/Fe_xMn_{1-x} Bilayers

2010 IEEE 7th International Symposium on Metallic Multilayers, Berkeley (U.S.A.), 19.–24.09.2010.

P. Stoll, M. Stampe, and W. Kuch

Exchange Bias and Training Effect in Ni/Fe_xMn_{1-x}/Ni Trilayers

DPG Spring Meeting 2010 of the Condensed Matter Section, Regensburg, 21.–26.03.2010.

C. Weis, M. Bernien, B. Krumme, J. Miguel, M. Piantek, X. Xu, Ph. Eckhold, J. Luo, J.

Kurde, P. Srivastava, K. Baberschke, W. Kuch, and H. Wende

Bestimmung der magnetischen Kopplungsstärke zwischen Eisenporphyrinen und ferromagnetischen Oberflächen

Deutsche Tagung für Forschung mit Synchrotronstrahlung, Neutronen und Ionenstrahlen an Großgeräten (SNI 2010), Berlin, 24.–26.02.2010.

d) presentations for the public

A. Krüger

Eis im Winter und im Sommer

Girl's Day, Berlin, Workshop at Fachbereich Physik der Freien Universität Berlin,

22.04.2010.

W. Kuch

Musik mit den Ohren der Physik

Sommeruniversität, Freie Universität Berlin, talk, 18.08.2010.

Degrees:

Marten Piantek

Switchable molecules on metallic surfaces studied by core-level spectroscopies
PhD degree, Freie Universität Berlin, 27.01.2010.

Paul Stoll

Untersuchungen von Exchange-Bias und Kopplungsphänomenen in FeMn/Ni-Zweifachschichten und Ni/FeMn/Ni-Dreifachschichten mit magnetooptischem Kerreffekt
Diploma degree, Freie Universität Berlin, February 2010.

Miriam Stampe

Magnetische Kopplung ultradünner Doppel- und Dreifachschichten aus ferromagnetischen Ni- und antiferromagnetischen $\text{Fe}_x\text{Mn}_{1-x}$ -Filmen
PhD degree, Freie Universität Berlin, 09.07.2010.

Simon Jaekel

Röntgenspektroskopie an selbstorganisierten Monoschichten schaltbarer Moleküle
Bachelor degree, Freie Universität Berlin, March 2010.

Kenji Yamamoto

Röntgenphotoelektronenspektroskopie an adsorbierten Schaltermolekülen
Bachelor degree, Freie Universität Berlin, July 2010.

Kalbe, Henryk

Röntgenspektroskopie an schaltbaren chemisorbierten Imin-Molekülen auf Au(111)-Oberflächen
Bachelor degree, Freie Universität Berlin, October 2010.

Pomaska, Manuel

Dynamic magnetic domains
Bachelor degree, Freie Universität Berlin, October 2010.