

AG Kuch
Scientific Activity Report 2008

Scientists:

Ball, David (until 15.10.)

Bernien, Matthias

Charilaou, Michalis (until 30.09.)

Chemam, Faïçal (until 28.01.)

Homberg, Tobias (since 01.04.)

Khan, Yaqoob (since 16.06.)

Krüger, Alex (since 01.04.)

Kuch, Wolfgang

Kurde, Julia

Lenz, Kilian (until 14.07.)

Martins, Maximiliano D. (29.09.–23.10.)

Miguel, Jorge

Navío, Cristina (since 18.02.)

Piantek, Marten

Sandow, Barbara (since 01.10.)

Stampe, Miriam

Yang, Seolun (07.07.–29.08.)

Publications:

R. Abrudan, J. Miguel, M. Bernien, C. Tieg, M. Piantek, J. Kirschner, and W. Kuch
Structural and magnetic properties of epitaxial Fe/CoO bilayers on Ag(001)
Phys. Rev. B **77**, 014411-1–7 (2008).

F. Chemam, K. Lenz, and W. Kuch
Influence of a Cr seed layer on the magnetic anisotropy of epitaxial Fe/Ag films on MgO(001)
Appl. Phys. A **92**, 381–385 (2008).

Y. Luo, M. Piantek, J. Miguel, M. Bernien, W. Kuch, and R. Haag
In-situ formation and detailed analysis of imine-bonds for the construction of conjugated aromatic monolayers on Au(111)
Appl. Phys. A **93**, 293–301 (2008).

J. Miguel, M. Bernien, D. Bayer, J. Sánchez-Barriga, F. Kronast, M. Aeschlimann, H. A. Dürr, and W. Kuch
A new sample holder for laser-excited pump-probe magnetic measurements on a Focus photoelectron emission microscope
Rev. Sci. Instrum. **79**, 033702-1–3 (2008).

E. Th. Papaioannou, K. Lenz, M. Charilaou, P. Fumagalli, P. Pouloupoulos, M. Angelakeris, N. K. Flevaris, F. Wilhelm, and A. Rogalev
CoCr/Pt multilayers with adjustable perpendicular anisotropy
J. Appl. Phys. **103**, 093905-1–7 (2008).

M. Piantek, J. Miguel, M. Bernien, C. Navío, A. Krüger, B. Priewisch, K. Rück-Braun, and W. Kuch
Adsorption of carboxymethylester-azobenzene on copper and gold single crystal surfaces
Appl. Phys. A **93**, 261–266 (2008).

J. Vogel, W. Kuch, K. Fukumoto, F. Romanens, S. Pizzini, and J. Camarero
Domain wall dynamics and interlayer interactions in magnetic trilayer systems studied by XMCD-PEEM
Appl. Phys. A **92**, 505–510 (2008).

F. Yildiz, F. Luo, C. Tieg, R. M. Abrudan, X. J. Fu, A. Winkelmann, M. Przybylski, and J. Kirschner
Strongly Enhanced Orbital Moment by Reduced Lattice Symmetry and Varying Composition of Fe_{1-x}Co_x Alloy Films
Phys. Rev. Lett. **100**, 037205-1–4 (2008).

Presentations:

a) invited talks

W. Kuch
Investigating the interaction between single-crystalline antiferromagnetic films and ferromagnets
72nd Annual Meeting 2008 and DPG-Spring Meeting of the Condensed Matter Section, Berlin, 25.–29.02.2008.

W. Kuch
Magnetism in reduced dimensions
Escuela ein Ciencia e Ingeniería de Materiales, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de Mexico, Mexico City (Mexico), 30.06.–04.07.2008.

W. Kuch

X-ray magnetic circular dichroism as a tool for the element-resolved investigation of layered magnetic structures

Joint Swedish–German Summer School “Frontiers in Modern Magnetism – Magnetic Phase Transitions”, Näslingen (Sweden), 14.–19.09.2008.

W. Kuch

Photoelectron emission microscopy of layered magnetic materials

Laboratório Nacional de Luz Síncrotron, Campinas (Brazil), 11.11.2008.

W. Kuch

Photoelectron emission microscopy of layered magnetic materials

Seminário Geral do Departamento de Física, Universidade Federal de Minas Gerais, e Seminário Geral DF/CDTN, Belo Horizonte (Brazil), 14.11.2008.

K. Lenz

Ferromagnetic Resonance – a smart tool to study static and dynamic properties

Seminar des Instituts für Ionenstrahlphysik und Materialforschung, Forschungszentrum Dresden Rossendorf e.V, Dresden, 28.01.2008.

J. Miguel, M. Bernien, X. Xu, M. Piantek, Ph. Eckhold, J. Luo, J. Kurde, P. Srivastava, K. Baberschke, W. Kuch, and H. Wende

Fe-prophyrin molecules on ferromagnetic substrates: Electronic structure and magnetic coupling strength

Joint European Magnetic Symposia (JEMS '08), Dublin (Ireland), 14.–19.09.2008.

H. Wende, M. Bernien, J. Luo, C. Weis, N. Ponpandian, J. Kurde, J. Miguel, M. Piantek, X. Xu, Ph. Eckhold, W. Kuch, K. Baberschke, P. Srivastava, P.M. Panchmatia, B. Sanyal, P.M. Oppeneer, and O. Eriksson

Substrate-induced magnetic ordering and switching of iron porphyrin molecules

72nd Annual Meeting 2008 and DPG-Spring Meeting of the Condensed Matter Section, Berlin, 25.–29.02.2008.

b) contributed talks

M. Bernien, X. Xu, J. Miguel, M. Piantek, Ph. Eckhold, J. Luo, J. Kurde, K. Baberschke, W. Kuch, H. Wende, and P. Srivastava

Fe-porphyrin monolayers on ferromagnetic substrates: Electronic structure and magnetic coupling strength

72nd Annual Meeting 2008 and DPG-Spring Meeting of the Condensed Matter Section, Berlin, 25.–29.02.2008.

W. Kuch, J. Miguel, D. Bayer, J. Sánchez-Barriga, J. Kurde, M. Piantek, F. Kronast, H. Dürr, and M. Aeschlimann

Time-resolved X-ray spectromicroscopic study of magnetization dynamics in magnetic microstructures

International Workshop on X-ray Spectroscopy of Magnetic Solids 2008 (XRMS 2008) and 2nd European XFEL Users' Meeting, Hamburg, 23.–24.01.2008.

J. Miguel, D. Bayer, J. Sánchez-Barriga, J. Kurde, M. Piantek, F. Kronast, H. A. Dürr, M. Aeschlimann, and W. Kuch

Imaging of ps-resolved magnetization dynamics in permalloy microstructures
Joint European Magnetic Symposia (JEMS '08), Dublin (Ireland), 14.–19.09.2008.

M. Niño, J. Camarero, W. Kuch, R. Abrudan, N. Mikuszeit, C. Tieg, M. P. Jigato, J. Kirschner, J. de Miguel, and R. Miranda
Tailoring the magnetic properties of all-ferromagnetic artificial FeCu(111) alloy thin films
IEEE International Magnetism Conference (INTERMAG 08), Madrid (Spain),
04.–08.05.2008.

M. Piantek, M. Bernien, J. Miguel, and W. Kuch
Adsorption studies of azobenzene molecules on Cu(001) and Au(111)
72nd Annual Meeting 2008 and DPG-Spring Meeting of the Condensed Matter Section, Berlin,
25.–29.02.2008.

M. Piantek, M. Bernien, J. Miguel, B. Priewisch, K. Rück-Braun, K. Hermann, and W. Kuch
Adsorption studies of azobenzene molecules on Cu(001) and Au(111)
25th European Conference on Surface Science (ECOSS 25), Liverpool (U.K.),
27.07.–01.08.2008.

K. M. Seemann, V. Baltz, M. C. Hickey, M. MacKenzie, J. Miguel, F. Kronast, W. Kuch, J. N. Chapman, C. H. Marrows, and B. J. Hickey
Ballistic and Diffusive Current Spin Polarization in L₁₀ ordered FePt and FePd
72nd Annual Meeting 2008 and DPG-Spring Meeting of the Condensed Matter Section, Berlin,
25.–29.02.2008.

K.M. Seemann, A. Aziz, F. Kronast, J. Miguel, W. Kuch, M.G. Blamire, A.T. Hindmarch, B.J. Hickey, and C.H. Marrows
Spin-orbit scattering and anomalous Hall effect in the epitaxial L₁₀-ordered ferromagnets FePd and FePt
53rd Annual Conference on Magnetism and Magnetic Materials, Austin, TX (U.S.A.),
10.–14.11.2008.

c) posters

D. Ball, M. Bernien, M. Piantek, J. Miguel, J. Kurde, W. Kuch, H. Wende, M. Haryono, S. Hain, and A. Grohmann
X-ray absorption spectroscopy of spin-crossover complexes on metallic surfaces
72nd Annual Meeting 2008 and DPG-Spring Meeting of the Condensed Matter Section, Berlin,
25.–29.02.2008.

D. Bayer, J. Miguel, J. Sanchez-Barriga, J. Kurde, M. Piantek, F. Kronast, M. Cinchetti, B. Heitkamp, H. Dürr, W. Kuch, and M. Aeschlimann
Time-resolved magnetization dynamics in magnetic microstructures
IEEE International Magnetism Conference (INTERMAG 08), Madrid (Spain),
04.–08.05.2008.

M. Bernien, J. Miguel, C. Weis, M. Piantek, X. Xu, Ph. Eckhold, J. Kurde, K. Baberschke, W. Kuch, and H. Wende

Magnetic coupling strength between Fe-porphyrin molecules and ferromagnetic films: A temperature-dependent XMCD investigation

27th BESSY Users' Meeting, Berlin, 04.–05.12.2008.

W. Kuch, R. Abrudan, J. Miguel, M. Bernien, M. Piantek, C. Tieg, and J. Kirschner
Interfacial magnetic domain coupling study in single-crystalline Fe/CoO bilayers using photoelectron emission microscopy

International Workshop on X-ray Spectroscopy of Magnetic Solids 2008 (XRMS 2008), Hamburg, 23.–24.01.2008.

J. Kurde, J. Miguel, D. Byer, J. Sánchez-Barriga, F. Kronast, M. Aeschlimann, H. A. Dürr, and W. Kuch

Imaging of magnetization dynamics in Py/Cu/Co tri-layer microstructures

27th BESSY Users' Meeting, Berlin, 04.–05.12.2008.

K. Lenz, S. S. Kalarickal, X. Xu, K. Baberschke, and W. Kuch

Dominant role of thermal magnon excitation in the temperature dependence of interlayer exchange coupling

72nd Annual Meeting 2008 and DPG-Spring Meeting of the Condensed Matter Section, Berlin, 25.–29.02.2008.

J. Miguel, R. M. Abrudan, M. Bernien, M. Piantek, C. Tieg, J. Kirschner, and W. Kuch
Interfacial magnetic domain coupling study in single-crystalline Fe/CoO bilayers

72nd Annual Meeting 2008 and DPG-Spring Meeting of the Condensed Matter Section, Berlin, 25.–29.02.2008.

J. Miguel, R. M. Abrudan, M. Bernien, M. Piantek, C. Tieg, and W. Kuch

Interfacial magnetic domain coupling study in single-crystalline Fe/CoO bilayers using photoelectron emission microscopy

Joint European Magnetic Symposia (JEMS '08), Dublin (Ireland), 14.–19.09.2008.

M. Piantek, A. Krüger, C. Navío, M. Bernien, J. Miguel, K. Hermann, and W. Kuch

Adsorption studies of azobenzene molecules on Cu(001) and Au(111)

27th BESSY Users' Meeting, Berlin, 04.–05.12.2008.

H. Wende, M. Bernien, J. Luo, C. Weis, N. Ponpandian, J. Kurde, J. Miguel, M. Piantek, X. Xu, Ph. Eckhold, W. Kuch, K. Baberschke, P. Srivastava, P.M. Panchmatia, B. Sanyal, P.M. Oppeneer, and O. Eriksson

Magnetic ordering and switching of iron porphyrin molecules mediated by ferromagnetic films

Joint Swedish–German Summer School “Frontiers in Modern Magnetism – Magnetic Phase Transitions”, Näslingen (Sweden), 14.–19.09.2008.

d) presentations for the public

W. Kuch

Die Zukunft der magnetischen Datenspeicherung

Lange Nacht der Wissenschaften, Berlin, public talk at Fachbereich Physik der Freien Universität Berlin, 14.06.2008.

W. Kuch

Musik mit den Ohren der Physik

Sommeruniversität, Freie Universität Berlin, talk, 20.08.2008.

Degrees:

Michalis Charilaou

Untersuchung der Magnetisierungsdynamik ultradünner Filme mittels ferromagnetischer Resonanz

Diploma degree, Freie Universität Berlin, September 2008.

David K. Ball

Röntgenspektroskopie an Spin-Crossover-Molekülen auf Metalloberflächen

Diploma degree, Freie Universität Berlin, October 2008.