

Scanning Probe Methods Group, Prof. Dr. Roland Wiesendanger

Publications: Original Articles

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Subgroup: MFM at Low Temperatures

Real space visualization of thermal fluctuations in a triangular flux line lattice*A. Schwarz, M. Liebmann, U. H. Pi, and R. Wiesendanger, New J. Phys. 12 033022 (2010)***Towards an understanding of the atomic scale magnetic contrast formation in NC-AFM: a tip material dependent MExFM study on Ni***A. Schwarz, U. Kaiser, and R. Wiesendanger, Nanotechnology 20 264017 (2009)***Visualizing the flux distribution of superconductors in external magnetic fields by magnetic force microscopy***U. H. Pi, Z. G. Khim, D. H. Kim, A. Schwarz, M. Liebmann, and R. Wiesendanger, Phys. Rev. B 73 144505 (2006)***Observation of the flux-antiflux boundary propagation during magnetization reversal in Bi₂Sr₂CaCu₂O_{8+delta} crystal with single vortex resolution***A. Schwarz, M. Liebmann, R. Wiesendanger, U. H. Pi, Z. G. Khim, and D. H. Kim, Appl. Phys. Lett. 88 012507 (2006)***Magnetization reversal of a structurally disordered manganite thin film with perpendicular anisotropy***M. Liebmann, A. Schwarz, U. Kaiser, R. Wiesendanger, D.-W. Kim, and T. W. Noh, Phys. Rev. B 71 104431 (2005)***Growth and Magnetism of Fe on Cr(001): A Spin-Polarized Scanning Tunneling Spectroscopy and Magnetic Force Microscopy Study***M. Bode, R. Ravlic, M. Kleiber, and R. Wiesendanger, Appl. Phys. A 80 907 (2005)***Barkhausen noise visualized in real space***A. Schwarz and M. Liebmann, Proceedings of SPIE 5843 52 (2005)***Dynamic force spectroscopy across an individual strongly pinned vortex in a Bi₂Sr₂CaCu₂O_{8+delta} single crystal.***U. H. Pi, Z. G. Khim, D. H. Kim, A. Schwarz, M. Liebmann, and R. Wiesendanger, Appl. Phys. Lett. 85 5307 (2004)***Direct observation of the vortices trapped in stacking fault dislocations of Bi₂Sr₂CaCu₂O₈ by a low-temperature magnetic force microscope.***U. H. Pi, Z. G. Khim, D. H. Kim, A. Schwarz, M. Liebmann, and R. Wiesendanger, Phys. Rev. B 69 94518 (2004)***Visualization of the Barkhausen Effect by Magnetic Force Microscopy.***A. Schwarz, M. Liebmann, U. Kaiser, R. Wiesendanger, T. W. Noh, and D. W. Kim, Phys. Rev. Lett. 92 77206 (2004)***Tilted magnetization of a La_{0.7}Sr_{0.3}MnO₃/LaAlO₃ (001) thin film***M. Liebmann, U. Kaiser, A. Schwarz, R. Wiesendanger, U. H. Pi, T. W. Noh, Z. G. Khim, and D. W. Kim, J. Magn. Magn. Mater. 280 51 (2004)***Vortex dynamics in Bi₂Sr₂CaCu₂O₈ single crystals with low density columnar defects studied by magnetic force microscopy.***U. H. Pi, D. H. Kim, Z. G. Khim, U. Kaiser, M. Liebmann, A. Schwarz, and R. Wiesendanger, Proc. Int. Conf. Physics and Chemistry of Molecular and Oxide Superconductors, J. Low Temp. Phys. 131 993 (2003)***Domain nucleation and growth of La_{0.7}Ca_{0.3}MnO_{3-delta}/LaAlO₃ films studied by low temperature MFM.***M. Liebmann, U. Kaiser, A. Schwarz, R. Wiesendanger, U. H. Pi, T. W. Noh, Z. G. Khim and D.-W. Kim, J. Appl. Phys. 93 8319 (2003)***A low-temperature ultrahigh vacuum scanning force microscope with a split-coil magnet.***M. Liebmann, A. Schwarz, S. M. Langkat, and R. Wiesendanger, Rev. Sci. Instr. 73 3508 (2002)***Investigation of the swelling of human skin cells in liquid media by tapping mode scanning force microscopy.***T. Richter, J. Müller, U. D. Schwarz, R. Wepf, and R. Wiesendanger, Appl. Phys. A 72 125 (2001)***Simulation of Non-contact atomic force microscopy images of Xenon(111)***H. Hölscher, W. Allers, U. D. Schwarz, A. Schwarz, and R. Wiesendanger, Appl. Phys. A 72 S35 (2001)***Simultaneous observation of atomic step and domain wall structure of ultrathin Co films by magnetic force microscopy***M. Dreyer, M. Kleiber and R. Wiesendanger, Appl. Phys. A 69 359 (1999)*

Composition driven change of magnetic anisotropy of ultrathin Co/Au (111) films studied by magnetic force microscopy under ultrahigh vacuum

M. Dreyer, M. Kleiber, A. Wadas, and R. Wiesendanger, Phys. Rev. B **59** 4273 (1999)

Magnetization switching of submicrometer Co dots induced by a magnetic force microscope tip

M. Kleiber, F. Kümmerlen, M. Löhndorf, A. Wadas, D. Weiss, R. Wiesendanger, Phys. Rev. B **58** 5563 (1998)

Local magnetization switching of submicrometer Co dots induced by a magnetic force microscope tip

M. Kleiber, F. Kümmerlen, M. Löhndorf, A. Wadas, D. Weiss, and R. Wiesendanger, Phys. Rev. B **58** 5563 (1998)

Investigation of micromagnetism and magnetization reversal of Ni nanoparticles using a magnetic force microscope

A.A. Bukharaev, D.V. Ovchinnikov, N.I. Nurgazizov, E.F. Kukovitskii, M. Kleiber, and R. Wiesendanger, Physics of the Solid State **40** 1163 (1998)

Vertical polarization of quantum magnets in high density arrays of nickel dots with small height-to-diameter ratio

G. Meier, M. Kleiber, D. Grundler, D. Heitmann and R. Wiesendanger, Appl. Phys. Lett. **72** 2168 (1998)

Ultrahigh vacuum magnetic force microscopy of the domain structure of ultrathin Co films

M. Dreyer, M. Löhndorf, A. Wadas, and R. Wiesendanger, Appl. Phys. A **66** 1209 (1998)

Thickness-dependent magnetic domain structures of ultrathin Co/Au(111) films studied by means of magnetic force microscopy in ultrahigh vacuum

A. Wadas, M. Dreyer, M. Kleiber, and R. Wiesendanger, Appl. Phys. A **66** 465 (1998)

Origin of the ferroelectric domain contrast observed in lateral force microscopy

H. Bluhm, U.D. Schwarz, and R. Wiesendanger, Phys. Rev. B **57** 161 (1998)

Micromagnetic properties and magnetization reversal of Ni nanoparticles studied by magnetic force microscopy

A.A. Bukharaev, D.V. Ovchinnikov, N.I. Nurgazizov, E.F. Kukovitskii, M. Kleiber, and R. Wiesendanger, Proc. 6th Int. Symp. Nanostructures: Physics and Technology, St. Petersburg, Russia 428 (1998)

Magnetic force microscopy of Ni nanoparticles formed by coalescence method

A.A. Bukharaev, D.V. Ovchinnikov, N.I. Nurgazizov, E.F. Kukovitskii, M. Kleiber, and R. Wiesendanger, Scanning **20** 3 (1998)

Quantitative analysis of the frictional properties of carbon compounds at low loads using friction force spectroscopy

U.D. Schwarz, O. Zwörner, P. Köster, and R. Wiesendanger, Phys. Rev. B **56** 6987 (1997)

The frictional properties of mica and germanium sulfide investigated by means of friction force spectroscopy

U.D. Schwarz, O. Zwörner, P. Köster, and R. Wiesendanger, Phys. Rev. B **56** 6997 (1997)

Stick-slip movement of a scanned tip on a graphite surface in scanning force microscopy

H. Hölscher, U.D. Schwarz, O. Zwörner, and R. Wiesendanger, Z. Phys. B. **104** 295 (1997)

Preparation of probe tips with well-defined spherical apices for scanning force spectroscopy

U.D. Schwarz, O. Zwörner, P. Köster, and R. Wiesendanger, J. Vac. Sci. & Tech. B **15** 1527 (1997)

Magnetostatic interaction studied by force microscopy in ultrahigh vacuum

A. Wadas, M. Dreyer, M. Löhndorf, and R. Wiesendanger, Appl. Phys. A **64** 353 (1997)

Novel writing using magnetic force microscopy in ultrahigh vacuum

A. Wadas, M. Dreyer, M. Löhndorf, and R. Wiesendanger, IEEE Trans. Magn. **33** 4050 (1997)

Structure of cross-tie wall in thin Co films resolved by magnetic force microscopy

M. Löhndorf, A. Wadas, H.A.M. van den Berg, and R. Wiesendanger, Appl. Phys. Lett. **68** 3635 (1996)