

Scanning Probe Methods Group, Prof. Dr. Roland Wiesendanger

Publications: Original Articles

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Subgroup: AFM on Insulators

Atomic-Site-Specific Analysis on Out-of-Plane Elasticity of Convexly Curved Graphene and Its Relationship to sp² to sp³ Re-Hybridization*M. Ashino and R. Wiesendanger, Crystals* **8** 102 (2018)**Probing the Nano-Skyrmion Lattice on Fe/Ir(111) with Magnetic Exchange Force Microscopy***J. Grenz, A. Köhler, A. Schwarz, and R. Wiesendanger, Phys. Rev. Lett.* **119** 047205 (2017)**Attractive force-driven superhardening of graphene membranes as a pin-point breaking of continuum mechanics***M. Ashino and R. Wiesendanger, Sci. Rep.* **7** 46083 (2017)**Characterizing tips suitable for atomic force microscopy and spectroscopy with atomic resolution and spin sensitivity***R. Schmidt, A. Schwarz, and R. Wiesendanger, Appl. Phys. Lett.* **110** 061601 (2017)**Set-up of a high-resolution 300 mK atomic force microscope in an ultra-high vacuum compatible 3He/10 T cryostat***H. von Allwörden, K. Ruschmeier, A. Köhler, T. Eelbo, A. Schwarz and R. Wiesendanger, Rev. Sci. Instr.* **87** 073702 (2016)**Temperature and non-linear response of cantilever-type mechanical oscillators used in atomic force microscopes with interferometric detection***G. Fläschner, K. Ruschmeier, A. Schwarz, R. Bakhtiari, M. Thorwart, and R. Wiesendanger, Appl. Phys. Lett.* **106** 123102 (2015)**Detecting the dipole moment of a single carbon monoxide molecule***A. Schwarz, A. Köhler, J. Grenz, and R. Wiesendanger, Appl. Phys. Lett.* **105** 011606 (2014)**Using Metallic Noncontact Atomic Force Microscope Tips for Imaging Insulators and Polar Molecules: Tip Characterization and Imaging Mechanisms***D. Z. Gao, J. Grenz, M. B. Watkins, F. F. Canova, A. Schwarz, R. Wiesendanger, and A. L. Shluger, ACS Nano* **8** 5339 (2014)**Miniaturized high-precision piezo driven two axes stepper goniometer***H. Zhong, A. Schwarz, and R. Wiesendanger, Rev. Sci. Instr.* **85** 045006 (2014)**Determining Adsorption Geometry, Bonding, and Translational Pathways of a Metal-Organic Complex on an Oxide Surface: Co-Salen on NiO(001)***A. Schwarz, D. Z. Gao, K. Lämmle, J. Grenz, M. B. Watkins, A. L. Shluger, and R. Wiesendanger, J. Phys. Chem. C* **117** 1105 (2013)**Magnetization switching utilizing the magnetic exchange interaction***R. Schmidt, A. Schwarz, and R. Wiesendanger, Phys. Rev. B* **86** 174402 (2012)**Quantitative Measurement of the Magnetic Exchange Interaction across a Vacuum Gap***R. Schmidt, C. Lazo, U. Kaiser, A. Schwarz, S. Heinze, and R. Wiesendanger, Phys. Rev. Lett.* **106** 257202 (2011)**Chemical Resolution at Ionic Crystal Surfaces Using Dynamic Atomic Force Microscopy with Metallic Tips***G. Teobaldi, K. Lämmle, T. Trevethan, M. Watkins, A. Schwarz, R. Wiesendanger, and A. Shluger, Phys. Rev. Lett.* **106** 216102 (2011)**Unambiguous Determination of the Adsorption Geometry of a Metal-Organic Complex on a Bulk Insulator***K. Lämmle, T. Trevethan, A. Schwarz, M. Watkins, A. Shluger, and R. Wiesendanger, Nano Letters* (2010)**Miniaturized transportable evaporator for molecule deposition inside cryogenic scanning probe microscopes***K. Lämmle, A. Schwarz, and R. Wiesendanger, Rev. Sci. Instr.* **81** 053902 (2010)**Three-electrode self-actuating self-sensing quartz cantilever: design, analysis, and experimental verification***C. J. Chen, A. Schwarz, R. Wiesendanger, O. Horn, and J. Müller, Rev. Sci. Instr.* **81** 053702 (2010)**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)

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