

SPS'06 SPSTM-1

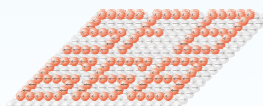
**4th International Conference on
Scanning Probe Spectroscopy
and
1st International Workshop on
Spin-Polarized Scanning Tunneling Microscopy**



July 23-26, 2006, University of Hamburg, Germany

Scientific Program

Organized under the auspices of
The Foundation of Polish-German Cooperation,
The German Center of Competence HanseNanoTec,
and the DFG-Sonderforschungsbereich 668



Conference Chairmen

R. Wiesendanger, University of Hamburg
R. Czajka, Poznan University of Technology

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M. Szymonski

Scope and Topics of the Conference

The 4th International Conference on Scanning Probe Spectroscopy (SPS'06) will be held in Hamburg, Germany on July 23-26, 2006, following the previous conferences in 1997 and 2003 in Poznan, Poland, and 2000 in Hamburg.

This meeting will focus on recent advances in instrumental developments, experimental methods, theoretical conceptions and applications of scanning probe spectroscopy. The topics include:

- scanning tunneling spectroscopy on metals, semiconductors and superconductors
- inelastic scanning tunneling spectroscopy
- scanning force spectroscopy
- scanning capacitance spectroscopy
- scanning near-field optical spectroscopy

Particular emphasis will be put on spin-polarized scanning tunneling spectroscopy. For this topic a special Workshop on SPSTM will be organized together with the SPS'06 conference to discuss latest developments in the field.

Sunday*Bucerius Law School***July 23, 2006****Su**

16.00 - 21.00 Registration in the Bucerius Law School

19.00 - 21.00 Reception with Buffett

Monday*Lecture Hall I "Wolfgang Pauli"***July 24, 2006****Mo**

9.00 - 9.10 Welcome

9.10 - 9.50 "Exploring and manipulating fullerenes: From molecule to monolayer"
*Mike Crommie (University of California at Berkeley, USA)*9.50 - 10.30 "Magnetic interactions in a chain of atomic spins"
Cyrus Hirjibehedin (IBM Almaden Research Center, San Jose, USA)

10.30 - 11.00 BREAK

11.00 - 11.40 "STS and IETS of molecules at surfaces"
*Maki Kawai (RIKEN Discovery Research Institute, Wako, Japan)*11.40 - 12.20 "Elastic and inelastic tunneling spectroscopy of single molecules"
Jose Ignacio Pascual (Freie Universität Berlin, Germany)

12.20 - 14.00 LUNCH BREAK

14.00 - 14.40 "Mechanical atom identification and following atom manipulation"
*Seizo Morita (Osaka University, Japan)*14.40 - 15.20 "Measuring atom dynamics using scanning tunneling noise spectroscopy"
Joseph A. Stroscio (National Institute of Standards and Technology, Gaithersburg, USA)

15.20 - 15.50 BREAK

- 15.50 - 16.30 "Assembly and spectroscopy of zero-, one-, and two-dimensional metal nanostructures"
Stefan Fölsch (Paul-Drude-Institute for Solid State Electronics, Berlin, Germany)
- 16.30 - 17.10 "STS of single atoms and molecules: From tunneling to contact"
Richard Berndt (University of Kiel, Germany)
- 19.00 - 20.30 Reception in the City Hall of Hamburg
 (Admission in the City Hall from 18.30 to 19.10)

Tu

Tuesday

Lecture Hall I "Wolfgang Pauli"

July 25, 2006

- 9.00 - 9.40 "On the Spin-Structure of antiferromagnetic phase domain walls"
Matthias Bode (University of Hamburg, Germany)
- 9.40 - 10.20 "Spin-polarized scanning tunneling microscopy of magnetic nitrides"
Arthur R. Smith (Department of Physics and Astronomy, Ohio University, USA)
- 10.20 - 10.50 BREAK
- 10.50 - 11.30 "The computational view of complex magnetism at the spatial limit"
Stefan Blügel (Institut für Festkörperforschung, Forschungszentrum Jülich, Germany)
- 11.30 - 12.10 "Spin-polarized scanning tunneling microscopy in the differential magnetic mode"
Wulf Wulfhekel (University of Karlsruhe, Germany)
- 12.10 - 13.30 LUNCH BREAK
- 13.30 - 14.10 "Spin-polarized scanning tunneling microscopy/spectroscopy study of MnAu(001) thin films"
Herman van Kempen (University of Nijmegen, The Netherlands)

14.10 - 14.50	"Novel magnetic structure in the Fe monolayer on Ir(111)" <i>Kirsten von Bergmann (University of Hamburg, Germany)</i>
14.50 - 15.30	"Surprising magnetic structures in 3d-transition metal films on 5d-metal substrates" <i>Stefan Heinze (University of Hamburg, Germany)</i>
15.30 - 16.00	BREAK
16.00 - 16.40	"Crystalline effects among neighbouring nanomagnetic islands" <i>Young Kuk (Seoul National University, Korea)</i>
16.40 - 17.20	"Spin-polarized scanning tunneling microscopy and spectroscopy of Fe(110)/Mo(110) nanostructures" <i>Hans-Joachim Elmers (University of Mainz, Germany)</i>
17.20 - 18.00	"Relations between atomic structure and magnetic coupling at the interface between a ferromagnet and an antiferromagnet" <i>Amadeo López Vázquez de Parga (University of Madrid, Spain)</i>
18.00 - 18.40	"Dense nano-spiral terraces and magnetic structures in Cr(001)" <i>Takeshi Kawagoe (Osaka Kzoiku University, Japan)</i>
18.40 - 19.00	BREAK
19.00 - 22.00	Poster Session I

Wednesday *Lecture Hall I "Wolfgang Pauli"* **July 26, 2006**

We

9.00 - 9.40	"Nanoscale studies of cuprate superconductors" <i>Ali Yazdani (Princeton University, USA)</i>
9.40 - 10.20	"Scanning tunneling microscopy of atoms/molecules on ultrathin insulating films" <i>Gerhard Meyer (IBM Zurich Research Laboratory, Switzerland)</i>
10.20 - 10.50	BREAK
10.50 - 11.30	"ESR-STM studies on paramagnetic spin centers on surfaces" <i>Yishay Manassen (Ben-Gurion University of the Negev, Israel)</i>

- 11.30 - 12.10 "A spin-polarized STM/STS study with photo-electrons from GaAs(110)"
Tozo Kazu Yamada (Gakushuin University, Tokyo, Japan)
- 12.10 - 12.50 "Magnetic Exchange Force Microscopy"
Alexander Schwarz (University of Hamburg, Germany)
- 12.50 - 14.00 LUNCH BREAK
- 14.00 - 17.00 Poster Session II
- 19.00 - 22.30 Boat Trip on the river Elbe and Closing

POSTER SESSION I: SPSTM-1 and SPS'06

Tuesday, July 25, 2006, 19.00 - 22.00:

Poster SPSTM-1:

- SP01 "Ab-Initio Analysis of SP-STM of $Mn_3N_2(010)$ Surfaces"
A. Dick, R. Yang, H. Yang, A. R. Smith, and J. Neugebauer
- SP02 "Thickness-dependent domain structure of ferromagnetic $Dy(0001)/W(110)$ films studied by SP-STM"
L. Berbil-Bautista, S. Krause, F. Vonau, M. Bode, and R. Wiesendanger
- SP03 "Temperature-Dependent Spin-Polarized Scanning Tunneling Microscopy and Spectroscopy on the $Cr(001)$ Surface"
T. Hänke, S. Krause, L. Berbil-Bautista, V. Wagner, M. Bode, D. Lott, A. Schreyer, and R. Wiesendanger
- SP04 "Surface State Electrons of Cobalt Nanostructures on Noble Metal Substrates"
P. A. Ignatiev, V. S. Stepanyuk, L. Niebergall, and P. Bruno
- SP05 "Controlling the Spin-Polarization of Nanostructures on Magnetic Substrates"
V. S. Stepanyuk, L. Niebergall, J. Berakdar, and P. Bruno
- SP06 "Spin-Polarized Rim State in Co Islands on $Cu(111)$ "
O. Pietzsch, S. Heinze, A. Kubetzka, M. Bode, S. Okatov, A. Lichtenstein, and R. Wiesendanger
- SP07 "Spin-Resolved Scanning Tunneling Spectroscopy of Co Nanostructures on $Pt(111)$ "
F. Meier, K. von Bergmann, J. Wiebe, P. Ferriani, M. Bode, K. Hashimoto, S. Heinze, and R. Wiesendanger
- SP08 "Thermal Switching Behavior of Superparamagnetic Nanoislands: SP-STM on $Fe/W(110)$ "
S. Krause, L. Berbil-Bautista, M. Bode, R. Wiesendanger
- SP09 "Image-Potential States on $Fe(110)$ "
A. Kubetzka, M. Bode, and R. Wiesendanger
- SP10 "Deconvolution of the Spin Resolved Manganite DOS from Tunneling Spectroscopy with Ferromagnetic Tip"
V. Dediu, P. Nozar, M. Cavallini, F. Biscarini, and I. Bergenti

- SP11 "Paramagnetically Induced Splitting of Tunnel Conductivity in Junctions between Ferromagnets and Normal or Superconducting CDW Metals"
T. Ekino, A. M. Gabovich, M. S. Li, M. Pękata, H. Szymczak, and A. I. Voitenko
- SP12 "Light-Assisted Scanning Tunneling Microscopy on a GaAs(110) Surface for Spin Observation"
N. Ishida and K. Sueoka
- SP13 "One-Dimensional Surface State on Antiferromagnetic Thin Film Surfaces"
H. Oka and K. Sueoka
- SP14 "Design of an Ultra High Vacuum Scanning Tunneling Microscope for Low Temperature Applications"
M. Gyamfi, O. Pietzsch, J. C. Chen, and R. Wiesendanger
- SP15 "The Interplay of Structure and Magnetism: Chromium Nanosystems on W(110)"
T. Wehling, and A. Lichtenstein
- SP16 "Spin Correlations and Free Magnetic Moments in Disordered Metals"
A. Zhuravlev, S. Kettemann, E. Mucciolo, E. Gorelov, and A. Lichtenstein
- SP17 "Realistic Description of Magnetic Nanostructures in Metallic Environment"
E. Gorelov, H. Hafermann, A. Rubtsov, and A. Lichtenstein
- SP18 "Mapping the Spin Structure of Large Unit Cells: Reconstructed Mn Films on Fe(001)"
C. L. Gao, U. Schlickum, W. Wulfhekkel, and J. Kirschner

Poster SPS'06:

- P01 "Scanning Tunneling Spectroscopy of Subsurface Nanoscaled Inhomogeneities"
O. A. O. Adam, O. Kurnosikov, H. J. M. Swagten, W. J. M. de Jonge, and B. Koopmans
- P02 "STS investigations of metallic nanostructures deposited on Bi₂Te₃"
S. Winiarz, P. Biskupski, S. Szuba, S. Mielcarek, and R. Czajka
- P03 "Manipulation and structure of Ferrocene molecule islands on a Au(111) surface"
K.-F. Braun, V. Iancu, N. Pertaya and S. W. Hla

- P04 "Temperature-Dependent Structure of the Heavily Reduced Rutile $\text{TiO}_2(001)$ Surface Studied by STM and STS"
A. Busiakiewicz, Z. Klusek, P. K. Datta, R. Schmidt, and W. Olejniczak
- P05 "Electronic Structure of Surface Modifications Created on $\text{TiO}_2(110),(100),(001)$ Surfaces Studied by Scanning Tunneling Microscopy and Spectroscopy"
Z. Klusek, A. Busiakiewicz, P. K. Datta, R. Schmidt, W. Kozłowski, P. Kowalczyk, and W. Olejniczak
- P06 "Scanning tunneling spectroscopy of single wall carbon nanotubes at metal surfaces"
S. Clair, Y. Kim, and M. Kawai
- P07 "Interaction of a 2D Electron Gas with the Periodic Potential of 1ML of Ag on $\text{Cu}(111)$ "
F. Calleja, J. J. Hinarejos, A. L. Vázquez de Parga, and R. Miranda
- P08 "Charging Effects in Hybrid Au-CdSe Nano-Dumbbells"
R. Costi and U. Banin
- P09 "Observation of Friedel oscillations on Bi_2Te_3 grains"
S. Winiarz, J. Walachova, and R. Czajka
- P10 "Tunneling into ErSi_2 nanoscale islands on $\text{Si}(111)$: a systematic analysis of charge transport mechanisms by STS"
E. Dupont-Ferrier, P. Mallet, I. Brihuega, L. Magaud, J. M. Gomez-Rodriguez, and J-Y. Veuillen
- P11 "Neutral phosphorus atoms in $\text{Si}(111)\text{-}2\times 1$ stabilize local buckling of II -bonded chains"
J. K. Garleff, M. Wenderoth, R. G. Ulbrich, C. Sürgers, H. von Löhneysen, and M. Rohlfing
- P12 "Running current through a single non resonant quantum state in silicon"
M. Berthe, A. Urbieto, R. Stiufiuc, B. Grandidier, D. Deresmes, C. Delerue, D. Stiévenard, R. Rurali, N. Lorente L. Magaud, and P. Ordejon
- P13 "Real-space Observation of Screened Potential by Scanning Tunneling Spectroscopy"
Y. Hasegawa, M. Ono, Y. Nishigata, T. Nishio, and T. Eguchi
- P14 "Self-Organisation and Spectroscopic Analysis of Azobenzene Derivatives"
N. Henningsen, K. J. Franke, G. Schulze, I. Fernandez-Torrente, P. Balani, and J. I. Pascual

- P15 "STM and STS on ultrathin layers of phthalocyanines and naphthalocyanines on highly-oriented pyrolytic graphite"
M. Hietschold, T. G. Gopakumar, J. Meiss, and F. Müller
- P16 "Interaction of the Scanning Tunneling Microscopy tip with adatoms and islands at the atomic scale"
R. Z. Huang, V. S. Stepanyuk, A. L. Klavsyuk, W. Hergert, P. Bruno and J. Kirschner
- P17 "Tunneling Spectroscopy on Organic Superconductors by STM"
K. Ichimura, K. Nomura and A. Kawamoto
- P18 "Scanning Tunneling Spectroscopy of the GaAsN(110) surface"
L. Ivanova, H. Eisele, A. Lenz, R. Timm, L. Geelhaar, O. Schumann, H. Riechert, and M. Dähne
- P19 "Au-Induced Atomic Chains on Si(11 11 13)"
M. Jałochowski, M. Krawiec, T. Kwapiński, and P. Mazurek
- P20 "Scanning Tunneling Microscopy and Spectroscopy Studies of Electric Properties of Carbon Nanotubes"
M. Kamiński, M. Wróblewski, M. Cęgiel, S. Szuba, and B. Susta
- P21 "Local Current Induced Destabilization of Charge Ordering in Single Crystals of $\text{Pr}_{0.63}\text{Ca}_{0.37}\text{MnO}_3$ as studied by Scanning Tunneling Spectroscopy"
S. Kar and A. K. Raychaudhuri
- P22 "Investigation of Electronic phase separation in Rare-Earth Manganites using Scanning Tunneling Spectroscopy"
S. Kar, Joy Mitra, Barnali Ghosh and A. K. Raychaudhuri

POSTER SESSION II: SPS'06

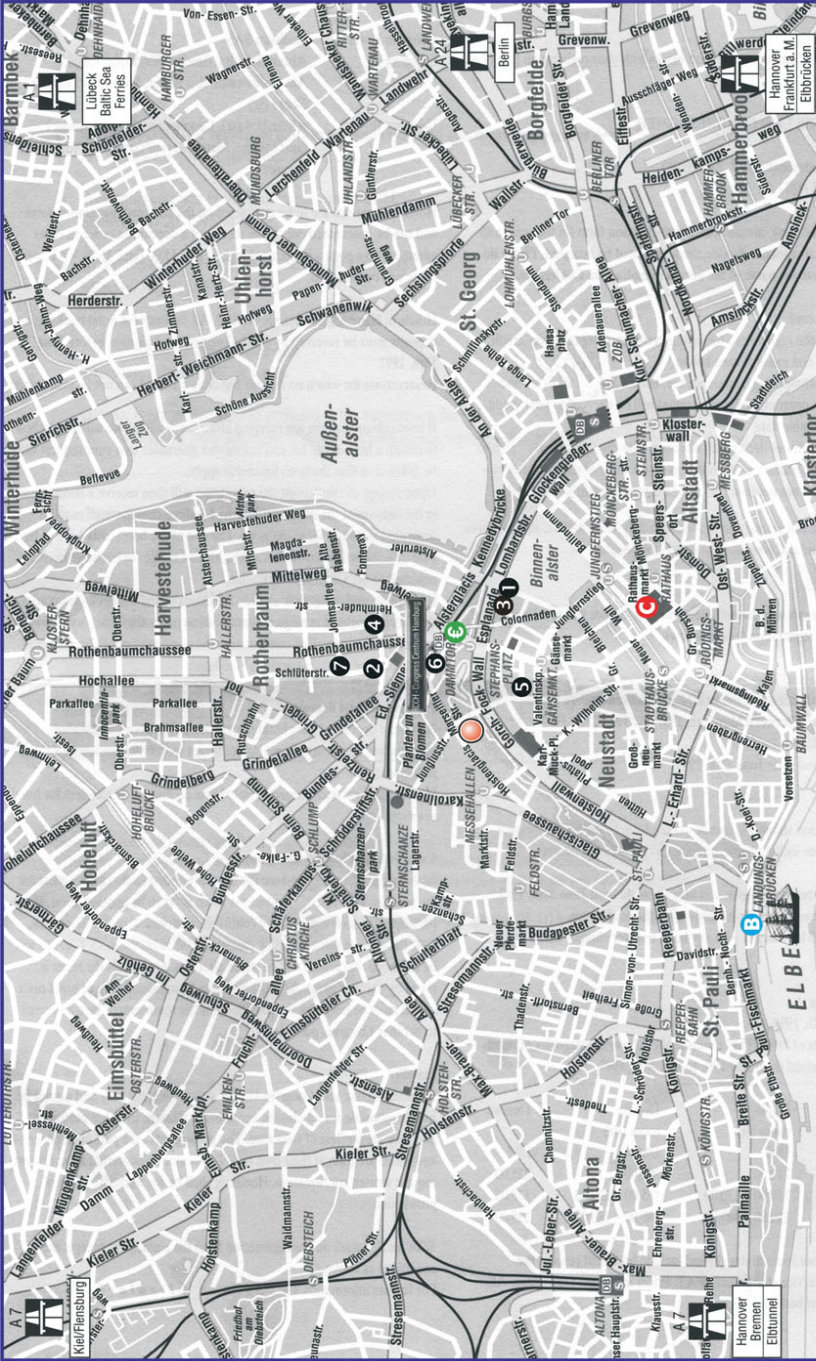
Wednesday, July 26, 2006, 14.00 - 17.00:

- P23 "Electronic Properties of Quaternary Derivatives on Au(111) explored by Tunneling Spectroscopy"
D. Kasemann, R. Franke, C. Wagner, and T. Fritz
- P24 "HT-STM Investigations of Resonant Image States on Au(111)"
P. Kowalczyk, Z. Klusek, W. Olejniczak, and P. K. Datta
- P25 "STM/STS Investigations of Carbon Nanotube Junctions"
W. Kozłowski, P. Kowalczyk, Z. Klusek, P. Byszewski, and W. Olejniczak

- P26 "Spatially Resolved Coulomb Blockade on Co Nanoislands Deposited on Thin Al_2O_3 Layer"
O. Kurnosikov, H. J. M. Swagten, W. J. M. de Jonge, and B. Koopmans
- P27 "STM Tunneling Through a Quantum Wire with Side-Attached Impurity"
M. Krawiec, T. Kwapinski, and M. Jatochowski
- P28 "The studies of some organic compounds (TEMPO, TEMPOL) deposited on Au(111) substrate"
P. Krukowski, W. Olejniczak, M. Puchalski, P. Kobierski, and K. Gwozdziński
- P29 "Functionalization of Single-Walled Carbon Nanotubes by Aromatic Molecules Studied by Scanning Tunneling Microscopy"
P. Lauffer, A. Jung, R. Graupner, A. Hirsch, and L. Ley
- P30 "Does Molybdenum(110) Differ from Tungsten(110) toward Adsorption of Oxygen?"
R.-L. Lo, Y.-Q. Zou, and D.-W. Yu
- P31 "Growth and electronic structure of ultrathin Chromium films on Iridium(111) Investigated by scanning tunneling microscopy and spectroscopy"
F. Marczinowski, K. von Bergmann, M. Bode, R. Wiesendanger
- P32 "Reinvestigation of the Si(111)- 7×7 surface by scanning tunneling spectroscopy"
J. Mysliveček, A. Stróżecka, J. Steffl, P. Sobotík, I. Ošťádal, and B. Voigtländer
- P33 "STM-IETS of single molecule on semiconductor surface"
B. Naydenov and J. J. Boland
- P34 "Co nanoislands on Cu(111): Growth and electronic states"
N. N. Negulyaev, V. S. Stepanyuk, L. Niebergall, W. Hergert, and P. Bruno
- P35 "Real-Space Imaging of Alternating Localized and Extended Electronic States at Graphite Surfaces"
Y. Niimi, H. Kambara, D. Yoshioka, and Hiroshi Fukuyama
- P36 "Scanning Tunneling Spectroscopy on Superconductivity of Nano-size Pb islands"
T. Nishio, M. Ono, T. Eguchi, H. Sakata, and Y. Hasegawa
- P37 "Nanoscale Mechanical Properties of Polymers Irradiated by UV"
M. Nowicki and A. Richter

- P38 "Bipolar transport in semiconductor nanocrystals"
K. Overgaag, P. Liljeroth, L. Jdira, B. Grandidier, S. Speller, and D. Vanmaekelbergh
- P39 "Oscillation of the density of states due to magnetic-field-induced localization in a three-dimensional semiconductor system"
K. Hashimoto, F. Meier, J. Wiebe, D. Haude, M. Morgenstern, and R. Wiesendanger
- P40 "Local Noise Spectroscopy using Scanning Tunneling Spectroscopy: Application in Phase Separated Manganites"
A. K. Raychaudhuri and J. Mitra
- P41 "Computing Scanning Tunneling Spectroscopy by the layer-KKR Real-Space Method"
K. K. Saha, J. Henk, A. Ernst, and P. Bruno
- P42 "Electron Standing wave patterns and dispersion relation of confined surface states"
G. Rodary, D. Sander, H. Ding, and J. Kirschner
- P43 "Selective tuning of electronic properties of Co nanoislands"
M. Sicot, O. Kurnosikov, O. A. O. Adam, H. J. M. Swagten, and B. Koopmans
- P44 "Tetraphenyladamantane and Fullerenes on metals: An example of decoupled molecular systems"
G. Schulze, K. Franke, I. F. Torrente, N. Henningsen, K. Rück-Braun, and J. I. Pascual
- P45 "LT-STM Study of Electronic and Vibrational Properties of C_{60} and $Ce@C_{82}$ on $Cu(111)$ "
A. Stróżecka, J. Mysliveček, and B. Voigtländer
- P46 "Quantization of conductance in magnetic nanowires"
B. Susła, M. Wawrzyniak, J. Barnaś, W. Nawrocki
- P47 "Preparation and characterization of $H:Si(111)1 \times 1$ surface Using STM/STS, AFM and HREELS"
S. Suto, H. Kato, T. Taoka, J. Osiecki, T. Yamada, S. Nishikata, G. Sazaki, K. Nakajima, R. Czajka, A. Wawro, and A. Kasuya
- P48 "Electronic coupling in two-dimensional arrays of PbSe nanocrystals"
P. Liljeroth, K. Overgaag, B. Grandidier, S. G. Hickey, and D. Vanmaekelbergh
- P49 "The Evaluation of $I(V)$ Curves in Scanning Tunneling Spectroscopy Revisited"
C. Wagner, R. Franke, and T. Fritz

- P50 "Scanning Tunneling Spectroscopy on Individual Mn-Acceptors in InAs"
J. Wiebe, F. Meier, K. Hashimoto, F. Marczinowski, R. Wiesendanger, M. Morgenstern, J.-M. Tang, and M. E. Flatté
- P51 "STM/STS investigations of titanium oxide nanostructures on Au substrate"
S. Winiarz, I. Piechocka, W. Polewska, and R. Czajka
- P52 "Growth and electronic structure of ultrathin KCl Layers on Cu(111)"
M. A. Schneider, R. Ohmann, M. Vogelgesang, O. Gürlü, L. Diekhöner, and K. Kern
- P53 "Quantum Interference in Nanometer Vacancy Islands: Experiment and Theory"
D. Sander, G. Rodary, H. Ding, L. Niebergall, V. Stepanyuk, P. Bruno, and J. Kirschner
- P54 "Modified Atomic Force Microscope for Rate-Dependent Adhesion Experiments"
A. Ptak, M. Kappl, and H.-J. Butt
- P55 "Q-controlled Dynamic Force Microscopy in Air and Liquids"
D. Ebeling, H. Hölscher, B. Anczykowski, and U. D. Schwarz
- P56 "Simulation of Non-Contact Atomic Force Microscopy of Ag(110)"
V. Caciuc, H. Hölscher, and H. Fuchs
- P57 "Application of DVD Pickup Head on Sub-Nano Scale Detection in Scanning Probe Microscopy"
K.-Y. Huang, E.-T. Hwu, S.-K. Hung, and I.-S. Hwang
- P58 "Organic Molecules on Semiconductor Surface - Noncontact Atomic Force Microscopy Study"
J. J. Kolodziej, M. Goryl, F. Krok, and M. Szymonski
- P59 "Kelvin Probe Force Spectroscopy of Ion Modified Surfaces"
F. Krok, S. R. Saeed, J. J. Kolodziej, B. Such, P. Piatkowski, and M. Szymonski
- P60 "Distinction of Individual Ionic Atoms on the Surface of (Ca,Sr)F₂/Si(111)"
Y. Seino, S. Yoshikawa, and S. Morita
- P61 "Spectroscopy Measurements with the Constant-Excitation Mode under Ambient Conditions"
J.-E. Schmutz, M. M. Schäfer, H. Hölscher
- P62 "Advances in 3D-Force-Field-Spectroscopy"
Uwe Kaiser, Alexander Schwarz, Roland Wiesendanger



- 1** Hotel Alsterhof
- 2** Hotel Amsterdam
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- 2** Hotel Bellmoor
- 4** Hotel Elysee
- 2** Hotel Fresena
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- Moonweidenstraße 34
- Esplanade 11
- Moonweidenstraße 34
- Rothenbaumchaussee 10
- Moonweidenstraße 34
- Hotel Oper
- Radisson SAS Hamburg
- Hotel Wagner
- Hotel Vorbach
- Venue SPS'06/SPSTM-1
- Drehbahn 15
- Marseiller Straße 2
- Moonweidenstraße 34
- Johnsallee 63-67
- City Hall
- St. Pauli Landungsbrücken
- Boat trip with the "Mississippi Queen"
- Brücke 5-10
- Bancomat
- Station "Dammtorbahnhof"



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