

# Program

May 10 (Monday), 2010

## Session MoA Chair:

9:00 **Opening Address**

T. Takahashi [General Chair]  
*University of Tokyo (Japan)*

9:15 MoA-1PL (Plenary)

**Nanotechnology inspired by SPM**

H. Tokumoto<sup>1,2</sup>  
<sup>1</sup>*Chuo University*, <sup>2</sup>*AIST (Japan)*

10:00 MoA-2I (Invited)

**Cryo Atomic Force Microscopy of IgM: Novel Structure and Functional Implications**

Z. Shao<sup>1</sup> and D.M. Czajkowsky<sup>2</sup>  
<sup>1</sup>*Shanghai Jiao Tong University (China)*, <sup>2</sup>*Chinese Academy of Sciences (China)*

10:30 MoA-3

**Improved Localization of Cellular Membrane Receptors Using Combined  
Fluorescence Microscopy and Simultaneous Topography and Recognition Imaging**

M. Duman<sup>1</sup>, M. Pflieger<sup>1</sup>, R. Zhu<sup>1</sup>, C. Rankl<sup>2</sup>, L.A. Chtcheglova<sup>1</sup>, I. Neundlinger<sup>1</sup>,  
B.L. Bozna<sup>1</sup>, B. Mayer<sup>1</sup>, M. Salio<sup>3</sup>, D. Shepherd<sup>3</sup>, P. Polzella<sup>3</sup>, M. Moertelmaier<sup>2</sup>, G. Kada<sup>2</sup>,  
A. Ebner<sup>1</sup>, M. Dieudonne<sup>4</sup>, G.J. Scheutz<sup>1</sup>, V. Cerundolo<sup>3</sup>, F. Kienberger<sup>2</sup> and P. Hinterdorfer<sup>1</sup>  
<sup>1</sup>*University of Linz (Austria)*, <sup>2</sup>*Agilent Technologies (Austria)*, <sup>3</sup>*University of Oxford (UK)*,  
<sup>4</sup>*Agilent Technologies (Belgium)*

10:45 MoA-4

**Structural and Genetic Responses to Mechanical AFM Stimulation in Live Cells**

Y.R. Silberberg, M. Kumeta and K. Takeyasu  
*Kyoto University (Japan)*

11:00 - 11:30 Coffee Break

## Session MoB Chair:

11:30 MoB-1I (Invited)

**Pulling and Pushing Proteins This Way and That Way**

A. Ikai, T. Hakari, H. Sekiguchi, S. Machida, T. Nakayama and R. Afrin  
*Tokyo Institute of Technology (Japan)*

12:00 MoB-2

**Local Structure and Dynamics of Cortex at Cell Periphery**

K. Tamura, T. Mizutani, H. Haga and K. Kawabata  
*Hokkaido University (Japan)*

12:15 MoB-3

**Tensile Property of Delipidated Red Blood Cell Cytoskeleton**

R. Afrin, M. Nakaji, H. Sekiguchi, S. Machida, T. Nakayama and A. Ikai  
*Tokyo Institute of Technology (Japan)*

12:30 MoB-4

**The Effect of Low Ciprofloxacin Concentrations on Enteroggregative Escherichia Coli and the Role of the Surface Protein Dispersin**

N.P. Mortensen<sup>1</sup>, J.D. Fowlkes<sup>1</sup>, S. Trevino-Dopatka<sup>1</sup>, N. Boisen<sup>2</sup>, M.J. Doktycz<sup>1</sup>, J.P. Nataro<sup>2</sup> and D.P. Allison<sup>1,3</sup>

<sup>1</sup>*Oak Ridge National Laboratory*, <sup>2</sup>*University of Maryland School of Medicine*, <sup>3</sup>*University of Tennessee (USA)*

12:45 - 14:15 Lunch

**Session MoC** Chair:

14:15 MoC-1

**Non-contact High-speed Force Microscopy**

R. Harniman, L. Picco, D. Engledew, M. Antognozzi and M. Miles

*University of Bristol (UK)*

14:30 MoC-2

**Development of FM-AFM Operated in Liquids Using Electrostatic Force Excitation**

K. Umeda<sup>1</sup>, Y. Hirata<sup>2</sup>, N. Oyabu<sup>1,3</sup>, K. Kobayashi<sup>1</sup> and H. Yamada<sup>1</sup>

<sup>1</sup>*University of Kyoto*, <sup>2</sup>*National Institute of Advanced Industrial Science and Technology*, <sup>3</sup>*JST Development of Systems and Technology for Advanced Measurement and Analysis (Japan)*

14:45 MoC-3

**High-Resolution Imaging in Liquid Using Frequency-Modulation Torsion Mode Atomic Force Microscopy**

C.-W. Yang, P.-H. Su and I.-S. Hwang

*Academia Sinica (China)*

15:00 MoC-4

**Influence of the Sliding Speed on Adhesion and Friction Forces**

O. Noel<sup>1</sup>, H. Nasrallah<sup>1</sup>, P.E. Mazeran<sup>2</sup>

<sup>1</sup>*University of Le Mans*, <sup>2</sup>*Technological University of Compiègne (France)*

15:15 - 15:20 Break

15:20 - 16:20 **Session MoEX: Exhibitor Presentation**

16:20 - 16:30 Break

16:30 - 18:00 **Session MoP: Poster Session**

## May 11 (Tuesday), 2010

### Session TuD Chair:

9:00 TuD-1I (Invited)

**High-resolution Three-dimensional Force Mapping in Various Environments**

H. Yamada

*Kyoto Univeristy (Japan)*

9:30 TuD-2

**Characterization of Self-oscillating Soft Imaging by Means of Photothermal Excitation**

M. Vassalli<sup>1</sup>, P. Paoletti<sup>2</sup>, M. Basso<sup>3</sup>, V. Pini<sup>4</sup> and B. Tiribilli<sup>2</sup>

<sup>1</sup>*IBF-CNR (Italy)*, <sup>2</sup>*ISC-CNR (Italy)*, <sup>3</sup>*University of Florence (Italy)*, <sup>4</sup>*IMM-CSIC (Spain)*

9:45 TuD-3

**Considering Criteria for Stable Self-Oscillation in Frequency-Modulation Atomic Force Microscopy**

Y. Hosokawa, K. Kobayashi, H. Yamada and K. Matsushige

*Kyoto University (Japan)*

10:00 TuD-4

**Frequency-Resolved Water Dynamics on a Hydrophilic Surface Studied with Wideband Magnetic Excitation AFM**

T. Ogawa, S. Kurachi, M. Kageshima, Y. Naitoh, Y. J. Li and Y. Sugawara

*Osaka University (Japan)*

10:15 TuD-5

**Force Spectroscopy at Liquid-Oxide Interfaces**

T.T. Hiasa<sup>1</sup>, K. Kimura<sup>1</sup>, H. Onishi<sup>1</sup>, R. Kokawa<sup>1,2,3</sup>, M. Ohta<sup>2</sup>, K. Watanabe<sup>2</sup>, M. Yamazaki<sup>2</sup>, N. Oyabu<sup>4</sup>, K. Kobayashi<sup>4</sup> and H. Yamada<sup>4</sup>

<sup>1</sup>*Kobe University*, <sup>2</sup>*Shimadzu Corp.*, <sup>3</sup>*JST*, <sup>4</sup>*Kyoto University (Japan)*

10:30 TuD-6

**Force Mapping on NaCl(100)/Cu(111) Surface by Atomic Force Microscopy**

K. Tenjin, Y. Naitoh, Y. J. Li and Y. Sugawara

*Osaka University (Japan)*

10:45 - 11:15 Coffee Break

### Session TuE Chair:

11:15 TuE-1

**Towards All Optical Force Microscopy**

D.B. Phillips<sup>1</sup>, D.M. Carberry<sup>1</sup>, S.H. Simpson<sup>1</sup>, S. Hanna<sup>1</sup>, M.J. Padgett<sup>2</sup> and M.J. Miles<sup>1</sup>

<sup>1</sup>*University of Bristol*, <sup>2</sup>*University of Glasgow (UK)*

11:30 TuE-2

**Nanoscale Infrared Spectroscopy with the Atomic Force Microscope**

C. Prater, D. Cook, M. Lo and K. Kjoller

*Anasys Instruments (USA)*

- 11:45 TuE-3  
**Local Photothermal Measurements by AFM around Grain Boundary in Multicrystalline Silicon Material**  
K. Hara and T. Takahashi  
*University of Tokyo (Japan)*
- 12:00 TuE-4  
**Local Current-voltage Behaviors of Polycrystalline Cu(In,Ga)Se<sub>2</sub> Thin Films Investigated by Conductive Atomic Force Microscopy**  
R. H. Shin, A. R. Jeong and W. Jo  
*Ewha Womans University (Korea)*
- 12:15 TuE-5  
**Frequency Dependence in Advanced KPFM and SCM on Semiconductors**  
A.-D. Müller<sup>1</sup>, C. Baumgart<sup>2</sup>, H. Schmidt<sup>2</sup> and F. Müller<sup>1</sup>  
<sup>1</sup>Anfatec Instruments AG, <sup>2</sup>FZ Rossendorf (Germany)
- 12:30 TuE-6  
**Numerical Investigation of Electrode Surface Potential Mapping with Scanning Electrochemical Potential Microscopy**  
R. F. Hamou, P. U. Biedermann, A. Erbe and M. Rohwerder  
*Max-Planck-Institut (Germany)*

12:45 - 14:15 Lunch

**Session TuF**      Chair:

- 14:15 TuF-II (Invited)  
**(TBA)**  
L. Eng  
*University of Technology Dresden (Germany)*
- 14:45 TuF-2  
**Local Electrical Investigations of Carbon Nanotube Network Devices with Scanning Probe Microscopy**  
J.-Y. Park  
*Ajou University (Korea)*
- 15:00 TuF-3  
**Microbial Interactions with Engineering Metal and Metal Oxide Nanoparticles**  
M.J. Doktycz, A.K. Suresh, N.P. Mortensen, W. Wang, S.D. Brown, B. Gu, D.C. Joy, J.W. Moon, T.J. Phelps, D.A. Pelletier and D.P. Allison  
*University of Tennessee (USA)*
- 15:15 TuF-4  
**Quantitative Dielectric Mapping of Nano-structured Systems by Means of Electrostatic Force Microscopy**  
G. Schwartz<sup>1</sup>, R. Arinero<sup>2</sup>, C. Riedel<sup>1,2,3</sup>, P. Tordjeman<sup>4</sup>, A. Alegria<sup>1</sup> and J. Colmenero<sup>1,3</sup>  
<sup>1</sup>UPV/EHU (Spain), <sup>2</sup>IES (France), <sup>3</sup>Donostia International Physics Center (Spain), <sup>4</sup>IMFT (France)

15:30 TuF-5  
**Imaging the Temperature-frequency Dependence of the Local Dielectric Response of Phase Separated Polymer Films by Means of EFM**  
C. Riedel<sup>1,2,3</sup>, R. Sweeney<sup>4</sup>, N. Israeloff<sup>4</sup>, R. Arinero<sup>1</sup>, G.A. Schwartz<sup>2</sup>, A. Alegría<sup>2,3</sup>, Ph. Tordjeman<sup>5</sup> and J. Colmenero<sup>2,3</sup>  
<sup>1</sup>Université Montpellier II (France), <sup>2</sup>UPV/EHU (Spain), <sup>3</sup>Donostia International Physics Center (Spain), <sup>4</sup>Northeastern University (USA), <sup>5</sup>Université de Toulouse (France)

15:45 TuF-6  
**STM Study of Two-dimensional Chiral Transition, Amplification and Tuning in a Molecular Assembly on an HOPG Surface**  
T. Chen<sup>1</sup> and L.-J. Wan<sup>2</sup>  
<sup>1</sup>Chinese Academy of Sciences, <sup>2</sup>Beijing National Laboratory for Molecular Sciences (China)

16:00 - 16:30 Coffee Break

**Session TuG** Chair:

16:30 TuG-1I (Invited)  
**Bimodal Atomic Force Microscopy: Fundamentals and Applications**  
R. García  
*Instituto de Microelectrónica de Madrid (Spain)*

17:00 TuG-2  
**Peak Force Tapping QNM and ScanAsyst**  
S. Kaemmer and N. Erina  
*Veeco Instruments (USA)*

17:15 TuG-3  
**Anti-drift and Auto-alignment Mechanism for an Astigmatic Detection System**  
E.-T. Hwu<sup>1,2</sup>, H. Illers<sup>2</sup>, I.-S. Hwang<sup>2</sup>, L. Jusko<sup>2</sup> and H.-U. Danzebrink<sup>1</sup>  
<sup>1</sup>Physikalisch-Technische Bundesanstalt (Germany), <sup>2</sup>Academia Sinica (China)

17:30 TuG-4  
**Higher Harmonic Generation in Amplitude Modulation AFM**  
E.T. Herruzo and R. García  
*IMM-CSIC (Spain)*

17:45 TuG-5  
**Local Hysteresis Loops by Variable Field Magnetic Force Microscopy**  
M. Jaafar<sup>1,2</sup>, O. Iglesias-Freire<sup>1</sup> and A. Asenjo<sup>1</sup>  
<sup>1</sup>CSIC, <sup>2</sup>UAM (Spain)

18:00 TuG-6  
**High-resolution Imaging of Ferritin by Bimodal Magnetic AFM in Liquid**  
C. Dietz, E.T. Herruzo and R. García  
*IMM-CSIC (Spain)*

May 12 (Wednesday), 2010

Session WeH Chair:

9:15 WeH-1I (Invited)

**Beyond the Optical Resolution in Living Cell: Biomedical Applications of Scanning Ion Conductance Microscopy**

Y.E. Korchev

*Imperial College London (UK)*

9:45 WeH-2

**High-frequency Electromagnetic Dynamics Properties of THP1 Cells Using Scanning Microwave Microscopy**

Y.J. Oh<sup>1</sup>, M. Hochleitner<sup>1</sup>, H.-P. Huber<sup>1</sup>, M. Duman<sup>1</sup>, B. Bozna<sup>1</sup>, M. Kastner<sup>1</sup>, M. Rang<sup>1</sup>, F. Kienberger<sup>2</sup> and P. Hinterdorfer<sup>1</sup>

<sup>1</sup>*Johannes Kepler University Linz*, <sup>2</sup>*Agilent Technologies Austria GmbH (Austria)*

10:00 WeH-3

**Combining AFM with Hollow Cantilevers for Electrophysiological Measurements**

P. Behr<sup>1,2</sup>, P. Dörig<sup>1</sup>, M. Gabi<sup>1,2</sup>, E. Sarajlic<sup>2,3</sup>, D. Bijl<sup>2,3</sup>, J. Vörös<sup>1</sup> and T. Zambelli<sup>1</sup>

<sup>1</sup>*ETH (Switzerland)*, <sup>2</sup>*Cytosurge LLC (Switzerland)*, <sup>3</sup>*SmartTip B.V. (The Netherlands)*

10:15 WeH-4

**Recognition Imaging on Macrophages**

L. Chtcheglova<sup>1</sup>, F. Ahmad<sup>2</sup>, S. Kuznetsov<sup>2</sup> and P. Hinterdorfer<sup>1</sup>

<sup>1</sup>*University of Linz (Austria)*, <sup>2</sup>*University of Rostock (Germany)*

10:30 WeH-5

**Simultaneous Topography and Recognition of Proteins in the Pathological Deposits in Pseudoexfoliation Syndrome Using AFM**

R. Creasey<sup>1</sup>, S. Sharma<sup>2</sup>, C. Gibson<sup>1</sup>, J. Craig<sup>2</sup>, T. Becker<sup>3</sup>, P. Hinterdorfer<sup>4</sup> and N. Voelcker<sup>1</sup>

<sup>1</sup>*Flinders University of SA (Australia)*, <sup>2</sup>*Curtin University of Technology (Australia)*,

<sup>3</sup>*Johannes Kepler Universität Linz (Austria)*

10:45 WeH-6

**Single Molecule Recognition Force Spectroscopy (SMRFS) on Living Cells**

L. Wildling<sup>1</sup>, A. Ebner<sup>1</sup>, C. Rankl<sup>2</sup>, T. Haselgrübler<sup>1</sup>, H. Gruber<sup>1</sup>, H. Oberleithner<sup>3</sup>, H. Sitte<sup>4</sup> and P. Hinterdorfer<sup>1</sup>

<sup>1</sup>*University of Linz (Austria)*, <sup>2</sup>*Agilent Technologies (Austria)*, <sup>3</sup>*University of Muenster (Germany)*, <sup>4</sup>*University of Vienna (Austria)*

11:00 - 11:30 Coffee Break

Session WeI Chair:

11:30 WeI-II (Invited)

**Polarization Controlled Electronic Effects on Ferroelectric Surfaces**

A. Gruverman

*University of Nebraska (USA)*

12:00 WeI-2  
**Optical Near-Field Characterization of Plasmonic and Magnetoplasmonic Nanostructures**  
A. Vitrey, E. Ferreiro-Vila, A. García-Martín, M.U. González and J.M. Garcia-Martín  
*IMM-CNM-CSIC (Spain)*

12:15 WeI-3  
**Magnetic Force Microscopy of Composite Magnetic Nanoparticles**  
C.S. Neves<sup>1</sup>, P. Quaresma<sup>1,2</sup>, P.A. Carvalho<sup>3</sup>, J.P. Araújo<sup>4</sup>, P.V. Baptista<sup>2</sup>, E. Pereira<sup>1</sup> and P. Eaton<sup>1</sup>  
<sup>1</sup>*Universidade do Porto*, <sup>2</sup>*UNL*, <sup>3</sup>*IST*, <sup>4</sup>*IFIMUP (Portugal)*

12:30 WeI-4  
**Atom Manipulation and Force Spectroscopy on Cu(110)-O Surface with Low Temperature AFM**  
Y. Kinoshita, T. Satou, Y. Notoh, Y. J. Li and Y. Sugawara  
*Osaka University (Japan)*

12:45 - 14:15 Lunch

**Session WeJ**      Chair:

14:15 WeJ-II (Invited)  
**High-resolution AFM of the Bacterial Photosynthetic Apparatus**  
L.-N. Liu and S. Scheuring  
*Institut Curie (France)*

14:45 WeJ-2  
**Dynamic Scanning Force Microscopy in Air: As Close as Possible**  
E. Palacios-Lidón, B. García-Pérez and J. Colchero  
*University of Murcia (Spain)*

15:00 WeJ-3  
**Electrostatic Interactions in Amyloid Fibril Formation and Toxicity**  
B. Moores, F. Hane and Z. Leonenko  
*University of Waterloo (Canada)*

15:15 WeJ-4  
**Levers Fit to Measure Molecular Machines**  
M. Antognozzi and J.K.H. Hoerber  
*University of Bristol (UK)*

15:30 WeJ-5  
**Compact Manipulator Based on an Atomic Force Microscope Coupled with a Haptic Device for Multi-probe Manipulation of Biological Samples**  
F. Iwata<sup>1</sup>, Y. Mizuguchi<sup>1</sup> and T. Ushiki<sup>2</sup>  
<sup>1</sup>*Shizuoka University*, <sup>2</sup>*Niigata University (Japan)*

15:45 - 16:15 Coffee Break

**Session WeK**      Chair: H. Hoerber

- 16:15 WeK-1  
**The Application of Chlorite Mineral Surfaces in the Observation and Manipulation of Bio-molecules**  
C. Hounsome and M. Antognozzi  
*University of Bristol (UK)*
- 16:30 WeK-2  
**FluidFM Technology - A New Tool for Micromanipulation**  
P. Dörig<sup>1</sup>, P. Stiefel<sup>1</sup>, E. Sarajlic<sup>2,3</sup>, D. Biji<sup>2,3</sup>, P. Behr<sup>1,2</sup>, M. Gabi<sup>1,2</sup>, J. Vörös<sup>1</sup>, J. Vorholt<sup>1</sup> and T. Zambelli<sup>1</sup>  
<sup>1</sup>*ETH Zurich (Switzerland)*, <sup>2</sup>*Cytosurge GmbH (Switzerland)*, <sup>3</sup>*SmartTip BV (The Netherlands)*
- 16:45 WeK-3  
**Fabrication of Plasmonic Nanostructures by Atomic Force Microscopy Nanolithography**  
H.-A. Chen and H.-N. Lin  
*National Tsing Hua University (Taiwan, R.O.C.)*
- 17:00 WeK-4  
**Line Patterning Using a Scanning Probe Lithography Technique**  
C. Han, G. Kwon, H. Lee and C.C. Chung  
*Hanyang University (Korea)*
- 17:15 WeK-5  
**Copper Nanofabrication of Direct Electrochemical AFM Lithography Using an Intermediate Self-Assembled Monolayer**  
G. Kwon, J.B. Yoo, H. Chu, C. Han, C.C. Chung and H. Lee  
*Hanyang University (Korea)*
- 17:30 WeK-6  
**Nanoparticle Alignment and Nanoscale Stamp Manufacture by Atomic Force Microscopy Indentation**  
C.H. Shin, K.J. Kim, Z.G. Khim, Y.S. Kim and B.-H. Sohn  
*Seoul National University (Korea)*
- 17:45 **Closing Remarks**  
T. Takahashi<sup>1</sup> and T. Ushiki<sup>2</sup>  
<sup>1</sup>*University of Tokyo*, <sup>2</sup>*Iigata University (Japan)*



# Poster Program

May 10 (Monday), 2010  
16:30 - 18:00

- MoP-01 **High Speed Friction Measurements**  
O. Payton, A. Champneys, M. Homer, L. Picco and M. Miles  
*University of Bristol (UK)*
- MoP-02 **Non-contact High-speed Force Microscopy - HS TDFM the Technique**  
R. Harniman, L. Picco, D.J. Engledew, M. Antognozzi and M.J. Miles  
*University of Bristol (UK)*
- MoP-03 **High-Speed AFM Imaging Using Commercial Low-speed Cantilevers**  
J. Soullier<sup>1</sup>, J. Kokavecz<sup>1</sup>, M. Ewald<sup>2</sup>, I. Casuso<sup>3</sup>, P.-E. Milhiet<sup>1</sup>, S. Scheuring<sup>3</sup>,  
E. Lesniewska<sup>2</sup> and C.L. Grimellec<sup>1</sup>  
<sup>1</sup>INSERM, <sup>2</sup>Université de Bourgogne, <sup>3</sup>Institut Curie (France)
- MoP-04 **Phase Detection for High Speed Noncontact Mode AFM**  
D. Lee, H. Lee and Y. Seo  
*Sejong University (Korea)*
- MoP-05 **Measuring Forces on a Single Molecule Level - Advances in AFM Force Spectroscopy and Imaging**  
G. Behme, H. Haschke, R. Owen and T. Jaehnke  
*JPK Instruments AG (Germany)*
- MoP-06 **FM-AFM Study of Proteins on Lipid Rafts**  
T. Sugihara<sup>1</sup>, T. Hiasa<sup>1</sup>, H. Onishi<sup>1</sup>, K. Kimura<sup>1</sup>, M. Ohata<sup>1</sup>, K. Watanabe<sup>2</sup>, R. Kokawa<sup>1,2,3</sup>,  
N. Oyabu<sup>3,4</sup>, K. Kobayashi<sup>4</sup>, H. Yamada<sup>4</sup>, T. Iwasaki<sup>1</sup> and Y. Fukami<sup>1</sup>  
<sup>1</sup>Kobe University, <sup>2</sup>Shimadzu Corp., <sup>3</sup>JST, <sup>4</sup>Kyoto University (Japan)
- MoP-07 **Site-selective Dynamic Force Spectroscopy of Biotin-Streptavidin/Avidin Interactions**  
A. Taninaka, O. Takeuchi and H. Shigekawa  
*University of Tsukuba (Japan)*
- MoP-08 **The Formation of Nano-shell between COS and GNPs for Cancer Therapy**  
I.H. Cho and I.J. Kang  
*Kyungwon University (South Korea)*
- MoP-09 **The Nucleosome-like Fundamental Unit of Liquid Crystalline Chromosome Revealed by Atomic Force Microscopy**  
S. Sun and J.T.Y. Wong  
*Hong Kong University of Science and Technology (China)*
- MoP-10 **Rheology of Transformed Cells Investigated by AFM**  
Y. Mizutani, P.G. Cai, M. Tsuchiya, K. Kawahara and T. Okajima  
*Hokkaido University (Japan)*

- MoP-11 **Drug-Induced Changes of Single Cell Rheology Investigated by Atomic Force Microscopy**  
P.G. Cai, Y. Mizutani, M. Tsuchiya, K. Kawahara and T. Okajima  
*Hokkaido University (Japan)*
- MoP-12 **Mode Synthesizing Atomic Force Microscopy of Plant Cells**  
 L. Tetard<sup>1,2</sup>, A. Passian<sup>1,2</sup>, R.H. Farahi<sup>1</sup>, A. Lereu<sup>3</sup> and T. Thundat<sup>1,2</sup>  
<sup>1</sup>*Oak Ridge National Laboratory*, <sup>2</sup>*University of Tennessee*, <sup>3</sup>*CINaM CNRS*
- MoP-13 **Recognition of Invariant Natural Killer T (iNKT) Cell Agonists by iNKT T Cell Receptor Using Single Molecule Force Spectroscopy**  
B.L. Bozna<sup>1</sup>, C. Rankl<sup>2</sup>, R. Zhu<sup>1</sup>, M. Duman<sup>1</sup>, P. Polzella<sup>3</sup>, D. Shepherd<sup>3</sup>, M. Salio<sup>3</sup>, V. Cerundolo<sup>3</sup> and P. Hinterdorfer<sup>1</sup>  
<sup>1</sup>*Johannes Kepler University (Austria)*, <sup>2</sup>*Agilent Technologies Austria GmbH (Austria)*, <sup>3</sup>*University of Oxford (UK)*
- MoP-14 **Direct Manipulation of Intracellular Structures Using Fabricated AFM Cantilevers**  
S. Machida<sup>1,2</sup>, T.W. Nakayama<sup>1</sup>, I. Harada<sup>1</sup>, R. Afrin<sup>1</sup>, T. Nakayama<sup>2,3</sup> and A. Ikai<sup>1</sup>  
<sup>1</sup>*Tokyo Tech*, <sup>2</sup>*NIMS MANA*, <sup>3</sup>*University of Tsukuba (Japan)*
- MoP-15 **Direct Detection of Cellular Adaptation to Local Cyclic Stretching at the Single Cellular Level with AFM**  
T. Nakayama, S. Machida, I. Harada, H. Sekiguchi, R. Afrin and A. Ikai  
*Tokyo Tech. (Japan)*
- MoP-16 **ROCKed Cell Surfaces: Distinct Contributions of RhoA-Effectors to Stiffness of Cell Surfaces**  
K. Tamura, T. Mizutani, H. Haga and K. Kawabata  
*Hokkaido University (Japan)*
- MoP-17 **Study of Interaction between LDL and LOX-1 on the CII by SPM**  
 M. Mizuoka, S. Nishino and T. Yoshino  
*Prefectural University of Hiroshima (Japan)*
- MoP-18 **The Transient Receptor Potential (TRP) Channels TRPP2 and TRPC1 Form a Heterotetramer with a 2:2 Stoichiometry and an Alternating Subunit Arrangement**  
T. Kobori<sup>1,3</sup>, G.D. Smith<sup>2</sup>, R. Sandford<sup>2</sup> and J.M. Edwardson<sup>1</sup>  
<sup>1</sup>*University Cambridge (UK)*, <sup>2</sup>*Addenbrooke Hosp. (UK)*, <sup>3</sup>*Natl. Agr. Food Res. Org. (Japan)*
- MoP-19 **Collagen Fibril Formation by Human Osteosarcoma Cells Observed by Atomic Force Microscopy**  
O. Hoshi and T. Ushiki  
*Niigata University (Japan)*
- MoP-20 **Phase Transition and Long-Range Ordering of Dialkyl Diselenide Self-Assembled Monolayers on Au(111)**  
 J. Choi<sup>1</sup>, H. Kang<sup>1</sup>, E. Ito<sup>2</sup>, M. Hara<sup>2,3</sup>, J. Noh<sup>1</sup>  
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- MoP-21 **Chitosan-Quantum Dot Nanocomposite for Biomarker**  
 J.K. Kwon and I.J. Kang  
*Kyungwon University (Korea)*
- MoP-22 **A Study of the Angular Distribution of the Surface Plasmon Excitation Induced by a Metal/glass Discontinuity**  
D. Brissinger<sup>1</sup>, A.L. Lereu<sup>1</sup>, L. Salomon<sup>1</sup>, B. Cluzel<sup>1</sup>, T. Charvolin<sup>2</sup>, C. Dumas<sup>1</sup>,  
 A. Passian<sup>3,4</sup> and F. de Fornel<sup>1</sup>  
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- MoP-23 **Nanoparticle Thermoplasmonic Modulation**  
 R.H. Farahi<sup>1,2</sup>, A. Passian<sup>1,2</sup>, A.L. Lereu<sup>3</sup>, L. Tetard<sup>1,2</sup>, T.L. Ferrell<sup>2</sup> and T. Thundat<sup>1,2</sup>  
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- MoP-24 **Nearfield Excitation and Polarization Dependence of Single Nanorods**  
 A.L. Lereu<sup>1</sup>, A. Passian<sup>2,3</sup>, R.H. Farahi<sup>2,3</sup>, Ph. Dumas<sup>1</sup>, L. Tetard<sup>2,3</sup> and T. Thundat<sup>2,3</sup>  
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- MoP-25 **Photoinduced Current Signal Excited by Linearly Polarized Light Studied by STM on InAs Wire Structures**  
S. Katsui and T. Takahashi  
*The University of Tokyo (Japan)*
- MoP-26 **Band Profile around Grain Boundary of Cu(InGa)Se<sub>2</sub> Solar Cell Materials Investigated by Scanning Probe Microscopy**  
 M. Takihara<sup>1</sup>, T. Minemoto<sup>2</sup>, Y. Wakisaka<sup>2</sup> and T. Takahashi<sup>1</sup>  
<sup>1</sup>*The University of Tokyo*, <sup>2</sup>*Ritsumeikan University (Japan)*
- MoP-27 **Formation of Ni-silicide Nanowires by Atomic Force Microscope Lithography and Solid-Phase Reaction**  
H.F. Hsu and T.H. Chen  
*National Chung Hsing University (Taiwan, R.O.C.)*
- MoP-28 **Carbon Nanotube Network on Deep Si Trench by Atomic Force Microscope Anodization and Electrically Regrown Mask Lithography**  
 G. Kwon, T.J. Lee, J. Seo, J.B. Yoo, H. Chu, M. Kim and H. Lee  
*Hanyang University (Korea)*
- MoP-29 **Molecular Adsorption in Liquid on a Single Gold Nanowire Fabricated by Atomic Force Microscopy Nanolithography**  
 H.-Y. Lin, F.-J. Lin and H.-N. Lin  
*National Tsing Hua University (Taiwan, R.O.C.)*
- MoP-30 **Gold Colloid Glycerol Droplets Made by Nano-inkjet Printing Method Based on Dynamic-mode AFM**  
K. Kaisei, K. Kobayashi, H. Yamada and K. Matsushige  
*Kyoto University (Japan)*

- MoP-31 **Local Metal Deposition Using a Scanning Nanopipette Microscope by Constant Charge Control**  
S. Ito and F. Iwata  
*Shizuoka University (Japan)*
- MoP-32 **Self-assembled Formation of Uniform-height Cd Nanocrystals on Si(111)-(7x7) Surface**  
Y.P. Zhang and G.Q. Xu  
*National University of Singapore (Singapore)*
- MoP-33 **Electrostatic Force Spectra on InAs Quantum Dots on GaAs Obtained by AFM with a Conductive Tip**  
S. Yamada and T. Takahashi  
*The University of Tokyo (Japan)*
- MoP-34 **Investigating the Formation Mechanism of Ge/Si/Ge Composite Quantum Dots by Selective Chemical Etching**  
H.T. Chang<sup>1</sup>, C.-H. Lee<sup>2</sup>, S.L. Cheng<sup>1</sup>, S.W. Lee<sup>1</sup>  
<sup>1</sup>*National Central University,* <sup>2</sup>*National Taiwan University (Taiwan, R.O.C.)*
- MoP-35 **The Compositional Distribution of Ge Islands Grown by Ultra-high Vacuum Chemical Vapor Deposition**  
H.T. Chang<sup>1</sup>, C.-H. Lee<sup>2</sup> and S. W. Lee<sup>1</sup>  
<sup>1</sup>*National Central University,* <sup>2</sup>*National Taiwan University (Taiwan, R.O.C.)*
- MoP-36 **Template-Assisted Fabrication of Size-Tunable Silicon Nanodot Arrays on (001)Si Substrate**  
C.Y. Yang, C.F. Chuang, S.W. Lee and S.L. Cheng  
*National Central University (Taiwan, R.O.C.)*
- MoP-37 **Enhanced Growth of 2D Periodic Arrays of Low-Resistivity CoSi<sub>2</sub> Nanodots on SiGe Substrates**  
C.F. Chuang<sup>1</sup>, C.Y. Yang<sup>1</sup>, H.F. Hsu<sup>2</sup>, S.L. Cheng<sup>1</sup> and H. Chen<sup>1</sup>  
<sup>1</sup>*National Central University,* <sup>2</sup>*National Chung Hsing University (Taiwan, R.O.C.)*
- MoP-38 **Optical Properties of Iron Silicide Nanostructures Grown by Reactive Deposition Epitaxy on Silicon Substrates**  
H.F. Hsu<sup>1</sup>, H.Y. Wu<sup>1</sup>, S.L. Cheng<sup>2</sup>, D.Y. Lyu<sup>1</sup>, J.R. Gong<sup>1</sup> and T.Y. Lin<sup>3</sup>  
<sup>1</sup>*National Chung Hsing University,* <sup>2</sup>*National Central University,* <sup>3</sup>*National Taiwan Ocean University (Taiwan, R.O.C.)*
- MoP-39 **STM and LEED Investigations of Structural Phases of Bi on Ru(0001)**  
X.-J. Chu, H. Huang, Y. Huang, W. Chen, A.T.S. Wee and X.-S. Wang  
*National University of Singapore (Singapore)*
- MoP-40 **Two Dimensional Organization of C<sub>60</sub> on Alcanethiol Monolayers**  
A. Beimborn, P. Mehring, D. Weier and C. Westphal  
*TU Dortmund (Germany)*

- MoP-41 **Force Propagation in Single Cells Adhered on Micro-fabricated Substrate Measured by AFM**  
A.Okada, Y. Mizutani, S. Agus, H. Hosoi, M. Nakamura, K. Sueoka, K. Kawahara and T. Okajima  
*Hokkaido University (Japan)*
- MoP-42 **Fabrication of Self-assembled Biomolecule Layers on Au Nanodot Pattern for Bioelectronic Device**  
T. Lee<sup>1</sup>, M. Jung<sup>1</sup>, A.K. Yagati<sup>1</sup>, J. Min<sup>2</sup> and J.-W. Choi<sup>1</sup>  
<sup>1</sup>*Sogang University,* <sup>2</sup>*Kyungwon University (Korea)*
- MoP-43 **H<sub>2</sub>O<sub>2</sub> Detection Sensor Composed of Gold Nanoparticle and Cytochrome c Hybrid System Using STM**  
A.K. Yagati<sup>1</sup>, T. Lee<sup>1</sup>, J. Min<sup>2</sup> and J.-W. Choi<sup>1</sup>  
<sup>1</sup>*Sogang University,* <sup>2</sup>*Kyungwon University (Korea)*
- MoP-44 **Optimization of Surface Roughness Using Atomic Force Microscopy Measurements and Box-Behnken Methodology**  
K. Kandananond  
*Rajabhat University (Thailand)*
- MoP-45 **A Sound Card Application for Cantilever Calibration**  
B. Tiribilli<sup>1</sup>, P. Paoletti<sup>1</sup>, M. Papi<sup>2</sup>, V. Pini<sup>3</sup>, F. Sbrana<sup>4</sup> and M. Vassalli<sup>5</sup>  
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- MoP-46 **Fourier Transform Infrared Spectroscopy Using Mechanical Oscillators**  
L. Tetard<sup>1,2</sup>, A. Passian<sup>1,2</sup>, R.H. Farahi<sup>1</sup>, A. Lereu<sup>3</sup>, T. Thundat<sup>1,2</sup>  
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