
12th International Colloquium on Scanning Probe Microscopy

薄膜・表面物理分科会特別研究会「走査プローブ顕微鏡(18)」

Atagawa Heights, Shizuoka, Japan

organized by

Thin Film and Surface Physics Division of Japan Society of Applied Physics

sponsored by

Japan Society of Applied Physics

9-Dec	10-Dec	11-Dec
	Session 5 (8:00-10:15)	Session 9 (8:00-10:10)
	08:00-08:35 S5-1 (Invited-S)	08:00-08:35 S9-1 (Invited-S)
	08:35-09:00 S5-2 (Invited)	08:35-09:10 S9-2 (Invited-S)
	09:00-09:15 S5-3	09:10-09:25 S9-3
	09:15-09:30 S5-4	09:25-09:40 S9-4
	09:30-09:45 S5-5	09:40-09:55 S9-5
	09:45-10:00 S5-6	09:55-10:10 S9-6
	09:45-10:15 S5-7	Break (10:10-10:25)
	Break (10:15-10:30)	Session 10 (10:25-12:35)
	Session 6 (10:30-12:30)	10:25-10:50 S10-1 (Invited)
	10:30-10:50 S6-1 (Invited-S)	10:50-11:05 S10-2
	11:05-11:30 S6-2 (Invited)	11:05-11:20 S10-3
	11:30-11:45 S6-3	11:20-11:35 S10-4
	11:45-12:00 S6-4	11:35-11:50 S10-5
	12:00-12:15 S6-5	11:50-12:05 S10-6
	12:15-12:30 S6-6	12:05-12:20 S10-7
Registration (12:00-14:00)	Lunch (12:30-13:45)	12:20-12:35 S10-8
Opening (14:00-14:05)	Session 7 (13:45-15:50)	Closing (12:35-12:40)
Session 1 (14:05-16:00)	13:45-14:20 S7-1 (Invited-S)	
14:05-14:40 S1-1 (Invited-S)	14:20-14:35 S7-2	
14:40-15:15 S1-2 (Invited-S)	14:35-14:50 S7-3	
15:15-15:30 S1-3	14:50-15:05 S7-4	
15:30-15:45 S1-4	15:05-15:20 S7-5	
15:45-16:00 S1-5	15:20-15:35 S7-6	
Break (16:00-16:15)	15:35-15:50 S7-7	
Session 2 (16:15-17:25)	Break (15:50-16:05)	
16:15-16:40 S2-1 (Invited)	Session 8 (16:05-18:00)	
16:40-16:55 S2-2	16:05-16:30 S8-1 (Invited)	
16:55-17:10 S2-3	16:30-16:45 S8-2	
17:10-17:25 S2-4	16:45-17:00 S8-3	
Session 3 (17:25-18:35)	17:00-17:15 S8-4	
Exhibitor's presentation	17:15-17:30 S8-5	
Dinner (18:40-19:30)	17:30-17:45 S8-6	
Session 4 (19:30-21:30)	17:45-18:00 S8-7	
Poster	Banquet (19:00-21:00)	

December 9 (Thursday)

12:00-14:00 Registration

14:00-14:05 Opening Remark

14:05-16:00 Session 1 (A.J. Fisher)

S1-1 (INVITED-S)

Single-Atom Spin-Flip Spectroscopy

A.J. Heinrich, C.P. Lutz, J.A. Gupta and D.M. Eigler (IBM)

S1-2 (INVITED-S)

Electron Correlation at Magnetic Atoms and Molecules on Metal Surfaces

L. Diekhoner (Max-Planck-Institut)

S1-3

Observation of Large-Scale Features on Graphite under Scanning Tunnelling Microscope

W. T. Pong, C. Durkan and J. Bendall (Univ. of Cambridge)

S1-4

Investigation of the Spatial Resolution in the Current-Induced Magnetic Field Detection by Magnetic Force Microscopy

¹D. Saida, ²T. Edura, ²K. Tsutsui, ²Y. Wada and ¹T. Takahashi (¹Univ. of Tokyo, ²Waseda Univ.)

S1-5

Local and Reversible Manipulation of Buckled Dimers on Clean Ge(001) Surface by STM

F. Komori, Y. Takagi, Y. Yoshimoto and K. Nakatsuji (Univ. of Tokyo)

16:00-16:15 Coffee Break

16:15-17:25 Session 2 (F. J. Garcia Vidal)

S2-1 (INVITED)

Capacitance and Quantum Effects of Nanostructures

^{1,3}K. Watanabe and ^{2,3}S. Watanabe (¹Tokyo Univ. of Science, ²Univ. of Tokyo, ³JST-CREST)

S2-2

Electrical Resistance Across a Step of the Si(111) $\sqrt{3}\times\sqrt{3}$ -Ag Surface

K. Kobayashi (Ochanomizu Univ.)

S2-3

Theoretical Analysis of Apparent Barrier Height on an Al Surface: Difference by Measurement Methods

^{1, 3}H. Totsuka, ^{2,3}*S. Furuya and ^{2,3}S. Watanabe* (¹*Nihon University*, ²*Univ. of Tokyo*, ³ *CREST -JST*)

S2-4

Non-Linear Current-Voltages Curve of Metal Point Contact

M. Yoshida, *Y. Ohshima and K.Takayanagi* (*Tokyo Institute of Technology*)

17:25-18:35 Session 3 – Exhibitor’s Presentation (M. Tomitori)

S3-1

Unisoku Co., Ltd.

The Introduction of the New Scanning Probe Microscope

S3-2

TOYOTA TSUSHO CORPORATION

SPM Applications

S3-3

Tomoe Engineering Company

Introduction of Our AFM Cantilevers

S3-4

SHIMADZU CORPORATION

Nano Search Microscope to the New Generation of Observation

S3-5

SII NanoTechnology Inc.

Introducing New Technology of SPM

S3-6

ULVAC-PHI Inc.

Nanotechnology News II

S3-7

NIHON VEECO K.K.

Message from Veeco

S3-8

HERZ Co., Ltd.

About active type of vibration isolation system for measuring instruments like SPM

S3-9

Tec Corporation

The Introduction of the New Products from Nanosurf : ”easyPLL plus & Mobile S”

S3-10

DAIKEN CHEMICAL CO., LTD.

Carbon Nanotube Probe, Nanomanipulator

S3-11

JEOL Ltd

Introduction of JEOL SPM's

S3-12

Molecular Imaging Corp.

Introduction of the New SPM Software and Hardware for Custom Applications

S3-13

OLYMPUS CORPORATION

Sneak Preview of a Micro Cantilever

S3-14

NEOARK CORPORATION

Laser Doppler Vibrometer with Light Exciting

18:40-19:30 Dinner

19:30-21:30 Session 4 – Poster Session (K. Nakajima, O. Takeuchi)
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POSTER: width = 90 cm, height = 100 cm

December 10 (Friday)

8:00-10:15 Session 5 (A.J. Heinrich)

S5-1 (INVITED-S)

Surface Plasmon Photonics

F. J. Garcia Vidal (Univ. Autonoma de Madrid)

S5-2 (INVITED)

Recent Progress on Scanning Nonlinear Dielectric Microscopy

Y. Cho (Tohoku Univ.)

S5-3

Scattering-Type SNOM Using Modulation of Linear Polarized Illumination and Quartz Tuning Fork Detection in Liquid Condition

F. Iwata, T. Furuhashi and A. Sasaki (Shizuoka Univ.)

S5-4

Quantum Mechanical Resonance Interaction between a Si Tip and a Si(111)7×7 Evaluated by Bias Voltage Noncontact Atomic Force Spectroscopy

^{1,2}T. Arai and ¹M. Tomitori (¹JAIST, ²PREST-JST)

S5-5

Direct Visualization of All Dangling Bonds and Charge Transfer on Surfaces by Atomic Force Microscopy

¹T. Eguchi, ²Y. Fujikawa, ^{1,5}K. Akiyama, ¹M. Ono, ³T. Hashimoto, ³Y. Morikawa, ³K. Terakura, ²T. Sakurai, ⁴M. G. Lagally and ^{1,5}Y. Hasegawa (¹Univ. of Tokyo, ²Tohoku Univ., ³AIST, ⁴Univ. of Wisconsin-Madison, ⁵PREST-JST)

S5-6

Origin of Anomalous p(2×1) Reconstruction on Si(001) Surface at 5 K Observed by NC-AFM

Y. Naitoh, Y. J. Li, M. Kageshima and Y. Sugawara (Osaka Univ.)

S5-7

Dynamic Force Microscopy at High Cantilever Resonance Frequencies Using Heterodyne Optical Beam Deflection Method

T. Fukuma, K. Kimura, K. Kobayashi, H. Yamada and K. Matsushige (Kyoto Univ.)

10:15-10:30 Coffee Break

10:30-12:30 Session 6 (K. Kobayashi)

S6-1 (INVITED-S)

Energy dissipation in nanoscale conductors

¹A.J. Fisher, ^{1,5}D.R. Bowler, ²W.A. Hofer, ¹A.P. Horsfield, ³H. Ness, ⁴C. Sanchez and ⁴T.N. Todorov (¹Univ. College London, ²Univ. of Liverpool, ³DSM/DRECAM, ⁴Queen's Univ. of Belfast, ⁵NIMS)

S6-2 (INVITED)

Dynamic Force Microscopy in Liquid

H. Yamada (Kyoto Univ.)

S6-3

High Sensitive Dynamic Force Microscopy in Liquids

Y. Sugawara, K. Fujii, Y. Naitoh and M. Kageshima (Osaka Univ.)

S6-4

Self-Assembled Monolayers of Alkanethiol and Fluoroalkane-thiol Investigated by Noncontact Atomic Force Microscopy

T. Ichii, M. Urabe, T. Fukuma, K. Kobayashi, H. Yamada and K. Matsushige (Kyoto Univ.)

S6-5

Visualization of Polymer Structures with Atomic Force Microscopy

¹M. Misawa and ²S. Magonov (¹Nihon Veeco K.K., ²Veeco Metrology Group)

S6-6

Interaction between Recombinant Ferritin Molecules and Solid Substrates Measured with an Atomic Force Microscopy

^{1,2}T. Hayashi and ^{1,2}M. Hara (¹Tokyo Institute of Technology, ²RIKEN)

12:30-13:45 Lunch

S7-1 (INVITED-S)

Measurement and Control of Electron Transport Properties of Single Molecules

N.J. Tao, B.Q. Xu and X.Y. Xiao (Arizona State Univ.)

S7-2

Ab initio Green's Function Formation for Electrical Transmission of Molecular Wires

^{1,2}T. Tada, ³M. Kondo, ³K. Yoshizawa and ^{1,2}S. Watanabe (¹Univ. of Tokyo, ²CREST-JST, ³Kyushu Univ.)

S7-3

Conductivity Measurement through Cytochrome c Molecules

¹M. Kataoka, ^{1,2}T. Matsumoto and ^{1,2}T. Kawai (¹Osaka Univ., ²CREST-JST)

S7-4

Surface Potential Measurement of the DNA-Au Nanoparticle Complex on Insulating Substrate

¹F. Yamada, ²A. Takagi, ¹T. Kusaka, ^{1,2}T. Matsumoto, ^{1,2}H. Tanaka and ^{1,2}T. Kawai (¹Osaka Univ., ²CREST JST)

S7-5

A Method of Fabrication Single Molecular-Sized Gap Electrodes without Electron Beam Lithography

Y. Naitoh, M. Horikawa and W. Mizutani (AIST)

S7-6

A Simple Fabrication Method of Nanogap Electrodes for Top-Contacted Geometry: Application to Porphyrin Nanorods and a DNA Network

¹Y. Otsuka, ²Y. Naitoh, ^{1,3}T. Matsumoto, ²W. Mizutani, ^{1,3}H. Tabata and ^{1,3}T. Kawai (¹Osaka Univ., ²AIST, ³CREST-JST)

S7-7

Formation of Molecular Wires by Nano-Space Polymerization of a Diacetylene Derivative Induced with a Scanning Tunneling Microscope at the Solid-Liquid Interface

¹S. Nishio, ²H. Matsuda, ²D. I-i, ²M. Yshidome, ²H. Uji-i and ²H. Fukumura (¹Ritsumeikan Univ., ²Tohoku Univ.)

S8-1 (INVITED)

Scanning Tunneling Microscopy and Spectroscopy of Phthalocyanine Molecules on Metal Surfaces

^{1,2,3}H. Tada and ²M. Takada (¹Institute for Molecular Science, ²Graduate Univ. for Advanced Studies, ³CREST-JST)

S8-2

Direct Observation of Conformational Isomers of (CH₃S)₂ Molecules on Cu (111)

M. Ohara, Y. Kim and M. Kawai (RIKEN)

S8-3

Voltage Dependent STM Images of One-Dimensionally Arranged Sexithiophene (6T) Molecules Grown on Ag (110)

H. Inoue and K. Saiki (Univ. of Tokyo)

S8-4

Self-Organized Structures of Alkyl-Substituted Phthalocyanines Depending on Alkyl Chain Length
K. Miyake, Y. Hori, T. Ikeda, M. Asakawa, T. Shimizu, T. Ishida and S. Sasaki (AIST)

S8-5

Spatially Controlled Desorption of Hydrogen from TiO₂(110)
¹C. L. Pang, ²O. Bikondoa, ³R. Ithnin, ²C. A. Muryn, ¹H. Onishi and ⁴G. Thornton (¹Kobe Univ, ²Univ. of Manchester, ³Univ. Malaya, ⁴ Univ. College London)

S8-6

STM and EXAFS Studies of Ni Subnanocluster Structure on TiO₂(110)
¹K. Fujikawa, ^{1,2}S. Suzuki, ¹Y. Koike, ^{1,2}W.-J. Chun and ¹K. Asakura (¹Hokkaido Univ., ²CREST-JST)

S8-7

Study of the Initial Process of Iron Silicide Film Growth on Si(111)
M. Matsumoto, K. Sugie, T. Kawauchi, K. Fukutani and T. Okano (Univ. of Tokyo)

19:00-21:00 Banquet

December 11 (Saturday)

8:00-10:10 Session 9 (N.J. Tao)
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S9-1 (INVITED-S)

New Instrumental Developments for NanoBio-Science Applications
J.K.H. Hörber (Wayne State Univ.)

S9-2 (INVITED-S)

Energy Dissipation in AFM
J.B.Pethica (Trinity College Dublin)

S9-3

Formation of Molecular Nanostructures by Patterned Assembly
Y. P. Zhang, K. S. Yong, Y. H. Lai, G. Q. Xu and X. S. Wang (National Univ. of Singapore)

S9-4

Site-Selective Deposition of Au Nanoparticles Using a DNA Based Method
¹Y. Maeda, ²Y. Maeda, ¹T. Okada, ¹M. Kodaka, ¹T. Fujitani and ¹S. Tsubota (¹AIST, ²Tokyo Metropolitan Institute of Medical Science)

S9-5

Investigate of Molecular Interaction Using Precision Force Control System for Dynamic Force Spectroscopy
A. Taninaka, T. Miyakoshi, K. Tanaka, O. Takeuchi and H. Shigekawa (Univ. of Tsukuba, 21st Century COE, CREST-JST)

S9-6

Ultra Small Amplitude Dynamic Force Microscopy with the Second Flexural Mode of the Cantilever
¹S. Kawai, ²S. Kitamura, ³D. Kobayashi and ¹H. Kawakatsu (¹Univ. of Tokyo, ²JEOL, ³JST)

10:10-10:25 Coffee Break

10:25-12:35 Session 10 (J.B.Pethica)

S10-1 (INVITED)

Coating Carbon Nanotubes with Inorganic Materials and Its Application to SPM Tip

M. Katayama (Osaka Univ.)

S10-2

A Proposal of Novel Lateral Force Sensor for Scanning Probe Microscopy

¹N. Shiraishi, ²Y. Ando (¹Univ. of Tsukuba, ²AIST)

S10-3

A Fabrication Method of Nanocantilevers Using Silicon Direct Bonding

D. Kobayashi, A. Higo, H. Toshiyoshi, H. Fujita and H. Kawakatsu (JST, Univ. of Tokyo)

S10-4

Nanometer-Scale Mechanical/Structural Properties of MoDTC/ZDDP Tribofilm and Friction Reduction Mechanism

¹J. Ye, ¹S. Araki, ²M. Kano and ²Y. Yasuda (¹NISSAN ARC LTD., ²Nissan Motor Company, Ltd.)

S10-5

Sample-and-Hold Imaging in Atomic Force Microscopy for Fast Scanning

T. Takahashi and S. Ono (Univ. of Tokyo)

S10-6

Kelvin Probe Force Microscopy Study on Conjugated Polymer/Fullerene Organic Solar Cells

¹Th. Glatzel, ²H. Hoppe, ¹M.Ch. Lux-Steiner, ²N.S. Sariciftci and ³M. Komiyama (¹Hahn-Meitner-Institut, ²LIOS, ³Yamanashi Univ.)

S10-7

Quantitative Evaluation of fA-Level Current in Gate Insulator by Conductive Atomic Force Microscopy

L. Zhang (Toshiba)

S10-8

Study of Spin-Polarized STM/STS Tips with Spin-Polarized Electrons from Optically-Pumped p-GaAs(110)

T. K. Yamada, D. Okuyama, N. Mizuno and T. Mizoguchi (Gakushuin Univ.)

12:35-12:40 Closing Remark

1. UHV-STM/STS Studies of Endohedral La-Metallofullerenes
¹A. Taninaka, ¹H. Kato, ¹N. Fukui, ¹T. Sugai, ³Y. Terada, ³S. Heike, ³T. Hashizume and ^{1,2}H. Shinohara (¹Nagoya Univ., ²CREST-JST, ³Hitachi Ltd.)
2. Tunneling Spectroscopy Analysis for the Observation of the HEX- Fluorescent Dye Attached DNA
T. Kawahara, T. Takahashi, H. Tanaka and T. Kawai (Osaka Univ.)
3. Electronic Conduction through a Single Molecule of a New p-Conjugated System Measured by Scanning Tunnelling Microscopy
K. Ishizuka, M. Suzuki, S. Fujii, U. Akiba and M. Fujihira (Tokyo Institute of Technology)
4. Multi-Environment Frequency Modulation Atomic Force Microscopy with True Molecular Resolution
T. Fukuma, K. Kobayashi, H. Yamada and K. Matsushige (Kyoto Univ.)
5. Spatio-Temporal Variations of Cellular Stiffness with Development of Polarity in Fibroblasts
S. Toko, T. Mizutani, H. Haga and K. Kawabata (Hokkaido Univ.)
6. Domain Like Structure of A Human Chromosome in Elasticity Distribution Observed by Mechanical-SPM
¹K. Nomura, ²O. Hoshi, ²D. Hukushi, ²T. Ushiki, ¹H. Haga and ¹K. Kawabata (¹Hokkaido Univ., ²Niigata Univ.)
7. Fabrication of Carbon Nanotubes Using Biological Molecules as Catalyst
M. Yoshimura, K. Tanaka and K. Ueda (Toyota Technological Institute)
8. Metal-Phthalocyanines Deposited on KCl(001) Surfaces Investigated by NC-AFM
T. Yoda, T. Ichii, T. Fukuma, K. Kobayashi, H. Yamada and K. Matsushige (Kyoto Univ.)
9. Nanoreological Analyses of Polymer Surfaces with Atomic Force Microscopy
H. Nukaga, H. Watabe, K. Nakajima and T. Nishi (Tokyo Institute of Technology)
10. Atomic Force Microscopy Investigation of Mechanical Property of Natural Rubber
H. Watabe, K. Nakajima and T. Nishi (Tokyo Institute of Technology)
11. Atomic Force Microscopy on Imogolite; an Alminosilicate Nanotube
¹Y. Ohrai, ¹T. Gouzu, ¹S. Yoshida, ¹O. Takeuchi, ²S. Ijima and ¹H. Shigekawa (¹Univ. of Tsukuba, 21st COE, CREST-JST, ²Meijo Univ.)
12. Primary Structural Units of Carbon Nanofibers Characterized by STM
¹B. An, ¹Z. Lin, ¹M. Wen, ¹S. Fukuyama, ¹K. Yokogawa, ²S. Lim, ²S. Yoon and ²I. Mochida (¹AIST, ²Kyushu Univ.)
13. Placing Carbon Nanotubes on Cu(111) Using Pulsed-Valve Injection
¹N. Fukui, ¹A. Taninaka, ¹H. Yoshida, ¹T. Sugai, ²Y. Terada, ²K. Miki, ³S. Heike, ³M. Fujimori, ³T. Hashizume and ^{1,4}H. Shinohara (¹Nagoya Univ., ²NIMS, ³Hitachi, Ltd., ⁴CREST-JST)
14. STM/STS Study of Single-Walled Carbon Nanotubes on Si Substrate
A. Tokura, K. Sumitomo and Y. Kobayashi (NTT Basic Research Laboratories)
15. Charge Injection Effects in a Single Phenylldithiol Molecule
K. Uchida, H. Kageshima and H. Inokawa (NTT Basic Research Laboratories)
16. Electrical Conductance of Polypyrrolyl Groups in a Chemically Adsorbed Monolayers in the Lateral Direction Using a Conductive AFM Technique
¹S-I. Yamamoto, ²K. Ogawa and ³N. Mino (¹Kobe City College of Technology, ²Kagawa Univ., ³Matsushita Electric Industrial Co., Ltd.)
17. Tip-Induced Rearrangement of Undecanol Molecules on Mica
¹L. Wang, ²E. Wang and ^{1,3}K. Itaya (¹Tohoku Univ., ²Chinese Academy of Sciences, ³CREST-JST)

18. Scanning Tunneling Microscopy of Underpotential Deposition of Cadmium on Au(111) in 0.1 M Hydrofluoric Acid
¹Z.-H. Zang, ^{2,3}S.-L. Yau and ^{1,3}K. Itaya, (¹Tohoku Univ., ²Taiwan National Central Univ., ³CREST-JST)
19. Scanning Tunneling Microscopy of Sulfur, Benzenethiol and Carbon Monoxide Chemisorbed on Ru(0001) in 0.1 M HClO₄
^{1,2}L.-Y. O. Yang, ^{2,3}S.-L. Yau and ^{1,3}K. Itaya (¹Tohoku Univ., ²Taiwan National Central Univ., ³CREST-JST)
20. In situ STM Investigation on the Co-Adsorption of Sulfur and Iodine on Au(111) in 0.1 M HClO₄ Solution
¹B.J.V. Tongol, ¹L.-Y. Ou Yang, ¹S.-L. Yau, and ^{1,2}K. Itaya (¹Tohoku Univ., ²CREST-JST)
21. Adsorption of FITC-I Dye on TiO₂(110) from an Acetone Solution
¹C. L. Pang, ²T. Ishibashi and ¹H. Onishi (¹Kobe Univ., ²Hiroshima Univ.)
22. Low Temperature Measurement of Local Density of States Images of Oxygen Adsorbed Sites on Si(111)7×7 surfaces
N. Horiguchi, T. Shinpo, M. Kondo and M. Miyao (Muroran Institute of Technology)
23. Initial Oxidation of Si(111)-(7×7) Studied by Low-Temperature STM
H. Okuyama and T. Aruga (Kyoto Univ.)
24. The Observation and Reactivity of Oxygen Atoms and Defects at CeO₂(111) Surfaces by Noncontact Atomic Force Microscopy (NC-AFM)
^{1,2}Y. Namai, ¹T. Tazawa and ¹Y. Iwasawa (¹Univ. of Tokyo, ²Mitsui Chemicals Inc.)
25. Hydrogen Interaction with a Si(113) - 3×2 Surface
K. Mamiya, M. Yoshimura and K. Ueda (Toyota Technological Institute)
26. Investigation of the Interaction of Hydrogen with Oxygen-Induced Nb(100) Surfaces by Scanning Tunneling Microscopy
¹B. An, ¹Z. Lin, ¹M. Wen, ¹S. Fukuyama, ¹K. Yokogawa and ²M. Yoshimura (¹AIST, ²Toyota Technological Institute)
27. Glycine/Cu(100) Surface Structures Induced by The Chirality of Adsorbates
K. Kanazawa, Y. Konishi, S. Yoshida, O. Takeuchi and H. Shigekawa (21st Century COE, CREST, Univ. of Tsukuba)
28. Inelastic Tunneling Spectroscopy on the Cu(111) surface in Strong Interference of the Surface Standing Wave
Y. Konishi, Y. Sainoo, K. Kanazawa, O. Takeuchi and H. Shigekawa (21st century COE, CREST, Univ. of Tsukuba)
29. Observation of Surface Electron Standing Waves on Ge/Si(001)
S. Tanaka and H. Hirayama (Tokyo Institute of Technology)
30. Simplistic Model of Graphite and its Applications in Superlattice
W.T.Pong and C. Durkan (Univ. of Cambridge)
31. Branches of Herringbone Structures on Reconstructed Au(111) Surfaces Observed by Scanning Tunneling Microscopy
H. Oka and K. Sueoka (Hokkaido Univ.)
32. AFM Observation of Low Temperature Step-and-Terrace Formation on Si(001) Wafer with Device Isolation Oxide for LSI Fabrication by Low-pH Wet-Treatment and H₂ Annealing
Y. Morita and M. Nishizawa (AIST)
33. Cobalt CVD Process on a Molybdenite Basal Plane Observed by Ultra-High Vacuum Scanning Tunneling Microscopy
¹K. Kiyohara, ²E. Yoda, ²M. Komiyama, ¹T. Kubota and ¹Y. Okamoto (¹Shimane Univ., ²Yamanashi Univ.)
34. Temperature Dependence of the Surface State Bandgap of Si(111)-(2×1) from Scanning Tunneling Spectroscopy
N. S. McAlpine, S. Nozaki, K. Uchida and H. Morisaki (Univ. of Electro-Communications)

35. A Scanning Tunneling Microscopy Study of the Partially Hydrogenated Si(111)-(2×1) Surface
N. S. McAlpine, S. Nozaki, H. Morisaki and M. Gunji (Univ. of Electro-Communications)
36. Atomically-Resolved NC-AFM Imaging on CaF₂/Si(111) Surface
Y. Seino, M. Abe and S. Morita (Osaka Univ.)
37. NC-AFM Observation of the $\sqrt{3}\times\sqrt{3}$ to the 3×3 Phase Transition in Sn/Ge(111) and Sn/Si(111) Semiconductor Surfaces
I. Yi, Y. Sugimoto, R. Nishi, Y. Seino and S. Morita (Osaka Univ.)
38. NC-AFM Study on Interaction Force Depending on a Distance between the Tip and the Sample in γ - and α -Sn/Si(111)-($\sqrt{3}\times\sqrt{3}$)R30° Surface
¹I. Yi, ¹Y. Sugimoto, ²J. Heo, ¹M. Abe and ¹S. Morita (¹Osaka Univ., ²SungKyunKwan Univ.)
39. STM/LEED Study on the Si(100) Surface Structure with Kr Adsorption at 10 K
T. Kimura, S. Yoshida, O. Takeuchi and H. Shigekawa (CREST JST, 21st Century COE, Univ. of Tsukuba)
40. Structural Stability for Si(001) and Ge(001) in External Electric Fields
J. Nakamura and A. Natori (Univ. of Electro-Communications)
41. Just-on-Surface MFM Observation of Magneto-Optical Disc
¹Z. bin Mohamad, ²D. Terauchi, ¹H. Sone and ¹S. Hosaka. (¹Gunma Univ., Hitachi High-Technologies Corporation)
42. Prototype of ANOM Based on a TTL Type Optical Lever Polarized Illumination and Detection System.
M. Ono, H. Sone and S. Hosaka (Gunma Univ.)
43. Tribology Tests Using Three-Dimensional Electrostatic Microstage
Y. Ando (AIST)
44. Mechanical Strength Measurements by Self-Sensing Piezoresistive Cantilever in Scanning Electron Microscope
A. Ando, H. Abe and T. Shimizu (AIST)
45. An Ultra-High Vacuum Dynamic Force Microscope for a High Resonance Frequency Cantilever
¹S. Kawai, ²D. Kobayashi, ³S. Kitamura, ⁴S. Meguro and ¹H. Kawakatsu (¹Univ. of Tokyo, ²JST, ³JEOL, ⁴Neoark Corp.)
46. Optical Excitation of Cantilever in Liquid with Q-Enhancement Control
¹T. Mutsuo, ¹T. Nakazawa, ²D. Kobayashi and ¹H. Kawakatsu (¹Univ. of Tokyo, ²JST)
47. Development of a Dynamic Force Microscope with Photothermal Excitation for Imaging in Liquids
T. Nakazawa, S. Kawai and H. Kawatatsu (Univ. of Tokyo)
48. SPM Controller using Digital Signal Processor
H. Hanada, Y. Miyatake, Y. Yamamoto, T. Sasaki, H. Mizuno, T. Nakagawa, K. Ishikawa and T. Nagamura (Unisoku Co., Ltd.)
49. Improvement of Detection Ability of Shaken-Pulse-Pair-Excited STM
M. Aoyama, O. Takeuchi and H. Shigekawa (CREST JST, 21st Century COE, Univ. of Tsukuba)
50. Backscattered Electron Energy Spectra from Nano-Structures Fabricated and Analyzed by a Field Emission STM with an Energy Analyzer
¹K. Yasui, ¹M. Hirade, ^{1,2}T. Arai and ¹M. Tomitori (¹JAIST, ²PREST-JST)
51. SP-STM Study on Defect-Induced Charge Freezing of Epitaxial Magnetite Film Surfaces
A. Subagyo and K. Sueoka (Hokkaido Univ.)
52. UHV-KFM Observation on Si (111) Step Edges
A. Miyachi, H. Sone and S. Hosaka (Gunma Univ.)
53. STM-Barrier Height Imaging of Subsurface Dopants on GaAs(110)
K. Kobayashi, S. Kurokawa and A. Sakai (Kyoto Univ.)

54. Low Temperature Kelvin Probe Force Microscopy of Multi-Quantum Well Solar Cells
¹*Th. Glatzel*, ²*A. Schwarzman*, ²*E. Grunbaum*, ³*K. Barnham*, ³*M. Mazzer*, ¹*M. Ch. Lux-Steiner*, ²*Y. Rosenwaks* and ⁴*M. Komiyama* (¹*Hahn-Meitner-Institut*, ²*Tel-Aviv Univ.*, ³*Imperial College London*, ⁴*Yamanashi Univ.*)
55. Sample-and-Hold Kelvin Probe Force Microscopy
¹*S. Ono* and *T. Takahashi* (*Univ. of Tokyo*)
56. Investigates of Surface Photovoltage via STM Barrier Height Methods
¹*J. Kikuchi*, *S. Yoshida*, *O. Takeuchi* and *H. Shigekawa* (*21st Century COE, CREST-JST, Univ. of Tsukuba*)
57. Local Photovoltage Mapping on Polycrystalline Silicon Solar Cells through Electrostatic Force Detected by AFM with Piezoresistive Cantilever
¹*T. Igarashi*, ²*T. Ujihara* and ¹*T. Takahashi* (¹*Univ. of Tokyo*, ²*Nagoya Univ.*)
58. Evaluation of Device Configurations Through Different Cross-Sectional Planes of 0.1 μm MOSFETs by Scanning Tunneling Microscopy/Spectroscopy
¹*S. Hasegawa*, *W. Doi*, *A. Yabuuchi* and *H. Asahi* (*Osaka Univ.*)
59. Mechanical Strength of Sharpened Carbon Nanotube Probes
¹*S. Akita* and ^{1,2}*Y. Nakayama* (¹*Osaka prefecture Univ.*, ²*Osaka Univ.*)
60. Fabrication of CNT Tips and an AFM for Biological Samples in Liquids
¹*H. Azebara*, *T. Okajima* and *H. Tokumoto* (*Hokkaido Univ.*)
61. Electrical Characterization of Metal-Coated Carbon Nanotube Tip
¹*S. Yoshimoto*, ¹*H. Okino*, ¹*R. Hobara*, ¹*I. Matsuda*, ²*Y. Murata*, ²*M. Kishida*, ²*T. Ikuno*, ²*D. Maeda*, ²*T. Yasuda*, ²*H. Okado*, ²*M. Katayama*, ²*K. Oura* and ¹*S. Hasegawa* (¹*Univ. of Tokyo*, ²*Osaka Univ.*)
62. Comparison between Heterodyne Laser Interferometer and Crystal Periodicity Observed by Friction Force Microscopy
¹*Y. Hoshi* and *H. Kawakatsu* (*Univ. of Tokyo*)
63. Symmetrical Quadrature FM Detector Equipped with Automatic Calibration
¹*D. Kobayashi*, *S. Kawai* and *H. Kawakatsu* (*JST, Univ. of Tokyo*)
64. Metal-Coated Carbon Nanotube Tip towards Multi-Tip STM Prober
¹*Y. Murata*, ¹*M. Kishida*, ¹*T. Ikuno*, ¹*D. Maeda*, ¹*T. Yasuda*, ¹*H. Okado*, ¹*M. Katayama*, ¹*K. Oura*, ²*S. Yoshimoto*, ²*R. Hobara*, ²*I. Matsuda* and ²*S. Hasegawa* (¹*Osaka Univ.*, ²*Univ. of Tokyo*)
65. Conductive Multi-Probe with Nano-Spring on Si Cantilever Grown by Focused Ion Beam Chemical Vapor Deposition
¹*M. Nagase*, ^{2,3}*K. Nakamatsu*, ^{2,3}*S. Matsui* and ¹*H. Namatsu* (¹*NTT Corp.*, ²*Univ. of Hyogo*, ³*CREST-JST*)
66. Scanning Nanopipette Probe Techniques for Nano Structure Patterning
¹*S. Nagami*, *A. Sasaki* and *F. Iwata* (*Shizuoka Univ.*)
67. Near-Infrared Laser Patterning of Gold Nanoparticle Thin Films
¹*K. Ajito*, ¹*K. Furukawa*, ¹*H. Nakashima*, ¹*K. Torimitsu*, ¹*Y. Ueno*, ²*Y. Sawai* and ²*K. Murakoshi* (¹*NTT Corp.*, ²*Hokkaido Univ.*)
68. Direct Printing of Gold Electrode for Molecular-Scale Devices
^{1,2}*K. Ojima*, ³*K. Nakamatsu*, ^{1,2}*T. Kanno*, ^{1,2}*T. Matsumoto*, ³*S. Matsui* and ^{1,2}*T. Kawai* (¹*Osaka Univ.*, ²*CREST-JST*, ³*Univ. of Hyogo*)
69. Investigation of the Switching Speed of an Atomic Switch Controlled by Solid Electrochemical Reaction
^{1,2,3}*T. Tamura*, ^{1,2}*T. Hasegawa*, ^{1,2}*T. Nakayama*, ^{1,2}*K. Terabe*, ³*S. Hosaka*, ^{1,4}*T. Sakamoto*, ^{1,4}*H. Sunamura*, ^{1,4}*H. Kawaura* and ^{1,2,5}*M. Aono* (¹*ICORP-JST*, ²*NIMS*, ³*Gunma Univ.*, ⁴*NEC*, ⁵*Osaka Univ.*)
70. Near-Field Light Detection by Dissipative Force Modulation Using a PZT Cantilever DFM/SNOM
¹*N. Satoh*, ¹*T. Fukuma*, ¹*K. Kobayashi*, ²*S. Watanabe*, ²*T. Fujii*, ¹*H. Yamada* and ¹*K. Matsushige* (¹*Kyoto Univ.*, ²*Nikon Corp.*)

71. Femtogram Mass Biosensor Using a Piezoresistive Cantilever in Water

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