The 10th International Colloquium on Scanning Probe Microscopy

薄膜・表面物理分科会特別研究会「走査型プローブ顕微鏡(16)」

Waikiki, Hawaii, 2002.10.31-11.2

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

sponsored by
Japan Society of Applied Physics

31-Oct room => Maloko	1-Nov room => Maloko	2-Nov room => Mauka
Registration (10:00-13:15)	**Session 5 (8:30-10:30)**	**Session 7 (8:00-10:24)**
Opening (13:15-13:30)	08:30-09:00 S5-1 (Invited)	08:00-08:30 S7-1 (Invited)
Session 1 (13:30-15:10)	09:00-09:30 S5-2 (Invited)	08:30-09:00 S7-2 (Invited)
13:30-14:10 S1-1 (Invited-S)	09:30-10:00 S5-3 (Invited)	09:00-09:12 S7-3
14:10-14:40 S1-2 (Invited)	10:00-10:30 S5-4 (Invited)	09:12-09:24 S7-4
14:40-15:10 S1-3 (Invited)	**Break (10:30-10:45)**	09:24-09:36 S7-5
Break (15:10-15:25)	**Session 6 (10:45-12:57)**	09:36-09:48 S7-6
Session 2 (15:25-17:55)	10:45-11:15 S6-1 (Invited)	09:48-10:00 S7-7
15:25-15:37 S2-1	11:15-11:45 S6-2 (Invited)	10:00-10:12 S7-8
15:37-15:49 S2-2	11:45-11:57 S6-3	10:12-10:24 S7-9
15:49-16:01 S2-3	11:57-12:09 S6-4	**Break (10:24-10:45)**
16:01-16:13 S2-4	12:09-12:21 S6-5	**Session 8 (10:45-13:33)**
16:13-16:25 S2-5	12:21-12:33 S6-6	10:45-11:15 S8-1 (Invited)
16:25-16:37 S2-6	12:33-12:45 S6-7	11:15-11:27 S8-2
16:37-17:07 S2-7 (Invited)	12:45-12:57 S6-8	11:27-11:39 S8-3
17:07-17:19 S2-8	**Break (12:57-19:00)**	11:39-12:09 S8-4 (Invited)
17:19-17:31 S2-9		12:09-12:39 S8-5 (Invited)
17:31-17:43 S2-10	**Banquet (19:00-21:00)**	12:39-12:51 S8-6
17:43-17:55 S2-11	**room: Makai**	12:51-13:03 S8-7
Session 3 (17:55-18:15)		13:03-13:33 S8-8 (Invited)
Exhibitor's presentation		**Closing (13:33-13:45)**
Break (18:15-20:00)		
Session 4 (20:00-22:00)		
Poster		

October 31 (Thursday)

Session room: Maloko

10:00-13:15 Registration

13:15-13:30 Opening Remark

ORAL: INVITED-S (35+5min), INVITED (25+5min), GENERAL (9+3min)

13:30-15:10 Session 1

S1-1 (INVITED-S)

Scanning Probes as the Gateway to Nanotechnology

C. Quate (Stanford Univ.)

S1-2 (INVITED)

Atom Selective Imaging and Mechanical Atom Manipulation by Noncontact-AFM

S. Morita and Y. Sugawara (Osaka Univ.)

S1-3 (INVITED)

Theoretical Bases of Non-Contact Atomic Force Microscopy
– from first-principles image simulation to dissipation force microscopy –

M. Tsukada (Univ. of Tokyo)

15:10-15:25 Break

15:25-17:55 Session 2

S2-1

NC-AFM Imaging Using Modified Tips on CaF_2(111)

T. Arai[1,2], L. Troeger[1], C. Barth[1] , S. Gritschneder[1] and M. Reichling[1] ([1]Univ. Munchen, Butenandtstr, [2]JAIST)

S2-2

Friction Force Microscopy Using Silicon Cantilevers Covered with Self-Assembled Monolayers via Silicon-Carbon Covalent Bonds

M. Ara[1] and H. Tada[2] ([1]Graduate, Univ. for Advanced Studies, [2]Inst. Mol. Sci. NRI)

S2-3

Fine Tuning Work Function of Au(111) Surface by Permanent Dipole Moments of Adsorbates

A. Nakasa, U. Akiba and M. Fujihira (Tokyo Institute of Technology)

S2-4

Elastic and Dissipating Properties of Single Biomolecule Studied with Magnetically-modulated Atomic Force Microscopy

M. Kageshima[1], S. Takeda[1], A. Ptak[2], C. Nakamura[1], S.P. Jarvis[1,3], H. Tokumoto[1] and J. Miyake[1] ([1]AIST, [2]Poznan Univ. of Technology, [3]Trinity College, Dublin)

S2-5

Super Para-magnetism of Fe Nano-cluster Observed by Non-contact Magnetic Force Microscopy

T. Matsumoto, Y. Naitoh, K. Sato, Y. Hirotsu and T. Kawai (ISIR, Osaka Univ.)

S2-6

Current-Induced Magnetic Field Detection by Magnetic Force Microscopy around a GaAs/AlGaAs Mesa Stripe

D. Saida and T. Takahashi (IIS, Univ. of Tokyo)

S2-7 (INVITED)

Atomic Level Analysis of Surfaces by the Scanning Atom Probe

O. Nishikawa (Kanazawa Institute of Technology)

S2-8

Scanning Probe Microscope Tip with Extracted Inner layer of Multiwalled Carbon Nanotubes

S. Akita and Y. Nakayama (Osaka Prefecture Univ.)

S2-9

Carbon Nanotube Tips for Chemically Selective Imaging in Scanning Tunneling Microscopy

T. Nishino[1], T. Ito[2] and Y. Umezawa[1] ([1]Univ. of Tokyo, [2]Texas A & M univ.)

S2-10

High Resolution Tunnelling Spectroscopy and Tunneling Microscopy with Currents Smaller than 100 fA – Development of a New UHV IVC

C. Wulker, A. Bettag, M. Wittmann, U. Fuchs, A. Feltz, M. Maier, B. Uder and T. Berghaus (OMICRON)

S2-11

Super Low Temperature STM with ^{3}He Refrigerator in High Magnetic Field

Y. Miyatake[1,2], D. Morishima[1], K.. Mizumura[1], T. Sasaki[1], H. Mizuno[1], T. Nagamura[1], H. Kanbara[3], T. Matui[3] and H. Fukuyama[3] ([1]UNISOKU Co., Ltd., [2]Nara Institute of Science and Technology, [3]Univ. of Tokyo)

17:55-18:15 Session 3 Short Presentation by Exhibitors

1. ULVAC-PHI、Inc./Omicron NanoTechnology アルバック・ファイ/ オミクロン
   Newly Development System for Nanotechnology
2. Unisoku Co., Ltd. （株）ユニソク
   UNISOKU Scanning Probe Microscope
3. HERZ INDUSTRY CO., LTD. ヘルツ工業（株）
   Active Vibration Isolation System for the Atmospheric air SPM and the Vacuum SPM.

4. JEOL Ltd. 日本電子（株）
Feature of JEOL SPM Series

20:00-22:00 Session 4 ------Poster------

POSTER: width = 90 cm, height = 150 cm

November 1 (Friday)

Session room: Maloko

8:30-10:30 Session 5

S5-1 (INVITED)
Synthesis of Gold Nanowires by STM in an UHV Electronmicroscope
K. Takayanagi[1], Y. Ohshima[2], K. Mohri[2] and H. Hirayama[2] ([1]Tokyo Institute of Technology, [2]Dept. of Materials Sci. and Technology)

S5-2 (INVITED)
Functional 1D Wire and Interconnections
Y. Kuk (Seoul National Univ.)

S5-3 (INVITED)
From Single Atoms to One-dimensional Solids: Artificial Au Chains on NiAl(110)
N. Nilius, T. M. Wallis and W. Ho (Univ. of California)

S5-4 (INVITED)
Dynamics of Single-electron Charge and Spin in a Quantum Dot
T. Fujisawa (NTT Basic Research Laboratories)

10:30-10:45 Break

10:45-12:57 Session 6

S6-1 (INVITED)
Towards Novel SPMs with Multiple Probes
M. Aono (Osaka Univ., RIKEN)

S6-2 (INVITED)
Nano-scale Studies of Quantum Phenomena in Electron Systems of Different Dimension
M. Morgenstern, D. Haude, J. Klijn, C. Meyer and R. Wiesendanger (Univ. of Hamburg)

S6-3

Self-assembled Nano-wires Fabricated by a Reaction of Gas-phase and Adsorbate Molecules

H. Uetsuka, A. Sasahara and H. Onishi (KAST)

S6-4

Anisotropy in Surface-state Electrical Conduction Measured by Microscopic Square Four-point Probe Method

T. Kanagawa, R. Hobara, I. Matsuda and S. Hasegawa (Univ. of Tokyo)

S6-5

First-principles Study of Ballistic Electron Transport in Atomic / Molecular Systems

N. Kobayashi[1], S. Abe[1] and M. Tsukada[2] ([1]NRI, SYNAF, AIST, [2]Univ. of Tokyo)

S6-6

Surface-state Conduction of (111) 2x1 Surfaces of Group-IV Semiconductors

K. Kobayashi (Ochanomizu Univ.)

S6-7

Surface Potential Imaging on InAs Quantum Dots and InAs Thin Films by Kelvin Prove Force Microscopy Operated in High Vacuum

S. Ono[1], M. Takeuchi[2] and T. Takahashi[1] ([1]IIS, Univ. of Tokyo, [2] RIKEN)

S6-8

Photo-Modulated Tunneling Spectroscopy for Nanoscale Bandbending Analysis

O. Takeuchi, S. Yoshida and H. Shigekawa (Univ. of Tsukuba, CREST)

12:57-19:00 Break

19:00 Banquet (Dinner Party) at room Makai

November 2 (Saturday)

Session room: Mauka

8:00-10:24 Session 7

S7-1 (INVITED)

In Situ Scanning Tunneling Microscopy of Individual Supported Metal Clusters at Reactive Gas Pressures from 10^{-8}-10^{-4} Pa.

A. Santra, B. K. Min, A. A. Kolmakov and D. W. Goodman (Texas A&M Univ.)

S7-2 (INVITED)

Near-field Scanning Optical Microscopy Studies of Interchain Species in MEH-PPV Films

R. D. Schaller and R. J. Saykally (Univ. of California, Berkeley)

S7-3

New Light-illumination STM Equipped with Optical Fiber Probe

K. Nakajima, J. Noh and M. Hara (RIKEN)

S7-4

Is Single-molecular Based Electroluminescence Feasible?

Z.-C. Dong[1], X.-L. Guo[1], A. S. Trifonov[1], P. Dorozhkin[1], K. Amemiya[1], T. Uchihashi[1], S. Yokoyama[2], T. Kamikado[2], S. Mashiko[2] and T. Okamoto[3] ([1]NIMS, [2]Comm.Research Lab., [3]RIKEN)

S7-5

Single-molecule Reaction and Characterization by Vibrational Excitation

Y. Kim, T. Komeda and M. Kawai (RIKEN)

S7-6

Inelastic Tunneling Spectroscopy; Selection Rules in the Detection of ν(C-H)

T. Komeda[1], Y. Kim[1], Y. Tomioka[1], M. Kawai[1], Y. Sainoo[2] and H. Shigekawa[2] ([1]RIKEN, [2]Univ. of Tsukuba, CREST)

S7-7

Detection Improvement for Electron Energy Spectra for Surface Analysis Using a Field Emission STM

M. Hirade ,T. Arai and M. Tomitori (JAIST)

S7-8

Nanoscale Characterization of the Modified Functional Diamond Surface by Kelvin Force Microscope

M. Tachiki, Y. Kaibara, Y. Sumikawa, T. Banno, H. Ishizaka, H. Umezawa and H. Kawarada (CREST, Waseda Univ.)

S7-9

The Effect of Permanent Dipole Moments of Adsorbates upon I-V Characteristics of a Bilayer Tunneling Junction

T. Senda, S. Wakamatsu, A. Nakasa, U. Akiba and M. Fujihira (Tokyo Institute of Technology)

10:24-10:45 Break

10:45-13:33 Session 8

S8-1 (INVITED)

Atom & Electron Dynamics at Surfaces of Nano-structures

T. T. Tsong (Academia Sinica, Taipei)

S8-2

Difference in Morphology of Si(111)-$\sqrt{3}\times\sqrt{3}$-Ag Surface with Various Preparations

M. Ueno, L. Canhua, I. Matsuda and S. Hasegawa (Univ. of Tokyo)

S8-3

Adsorption of CO on Si(100) Surface at 80 K: an STM Study

M. Z. Hossain, Y. Yamashita, K. Mukai and J. Yoshinobu (Univ. of Tokyo)

S8-4 (INVITED)

Nanolithography with the STM

K. Sattler (Univ. of Hawaii)

S8-5 (INVITED)

Strain Engineering for Control of Self-organized Quantum Nanostructures

T. Ogino (NTT Basic Research Laboratories)

S8-6

AFM Alignment of P(VDF-TrFE) Crystals and Molecules

K. Kimura[1,2], K. Kobayashi[3], H. Yamada[2], T. Horiuchi[2], K.Ishida[2] and K. Matsushige[2,3] ([1]Advanced Software Technology and Mechatronics Research Institute of Kyoto, [2]Kyoto Univ., [3]Int. Innovation Center, Kyoto Univ.)

S8-7

Selective Growth of Ge 3D Islands on Stepped Si(111) Surfaces with Different Step Directions

F. Lin, K. Sumitomo, Y. Homma and T.Ogino (NTT Basic Research Laboratories)

S8-8 (INVITED)

SPM Technologies Beyond Observavtion & Manipulation !

H. Tokumoto (NRI/ AIST)

13:33 Closing Remark

October 31, 20:00-22:00 Session 4 -- Poster session --

Session room: Maloko

S4-1

Spin-Polarized Scanning Tunneling Microscopy Using Optically Pumped GaAs Probes

A. Subagyo[1], K. Sueoka[1], H. Oka[1], M. Sawamura[2] and K. Mukasa[1] ([1]Hokkaido Univ., [2]JST Corporation Innovation Plaza Hokkaido)

S4-2

Room Temperature Scanning Hall Probe Microscopy of Ferromagnetic Microstructures Under 2.5 Tesla Pulsed Bias Fields

A. Sandhu[1], H. Masuda[2] and A. Oral[3] ([1]Tokyo Institute of Technology, [2]Toei Kogyo Ltd., [3]Bilkent Univ.)

S4-3

Ultrasonic Tip Microscopy of Composite Materials

Y. Katayama, K. Nakamoto, K. Abe and K. Uozumi (Aoyama Gakuin Univ.)

S4-4

Development of the Scanning Probe Microscope for Auger Analysis II

Y. Miyatake[1,2] , T. Nagamura[2] , K. Hattori[1] , Y. Kanemitsu[1] and H. Daimon[1] ([1]Nara Institute of Science and Technology, [2] UNISOKU Co.,Ltd.)

S4-5

First SEM, SAM and Combined SEM/STM Results of a Novel UHV Compatible Electron Column whith Sub 3 nm Resolution

C. Wulker[1], J. Westermann[1], M. Maier[1], G. Schafer[1], J. Bihr[2], J. Zach[3] and T. Berghaus[1] ([1]OMICRON, [2]LEO, [3]CEOS)

S4-6

New Cu Fine Line Direct Drawing Method Using a STM-Electroplating Combination System

Y. Suda, H. Tanaka and M. Sekiguchi (Tokyo Univ. of Agriculture and Technology)

S4-7

Fabrication of Carbon Nanotube onto the Apex of Scanning Tunneling Microscopy Probe by Chemical Vapor Deposition

M. Yoshimura, S. Jo and K. Ueda (Toyota Technological Institute)

S4-8

Orthopedic Treatment of Multiwalled Carbon Nanotube Probes

H. Negishi, M. Ohashi, S. Akita and Y. Nakayama (Osaka Prefecture Univ.)

S4-9

Batch Fabrication of Sharpened Silicon Nitride Tips

M. Kitazawa[1], K. Shiotani[1] and A. Toda[2] ([1]OLYMPUS OPTICAL CO., LTD., [2]SED, OLYMPUS OPTICAL CO., LTD)

S4-10

Nano-four-point Probes on Micro-cantilever System Fabricated by Focused Ion Beam

M. Nagase[1], H. Takahashi[2], Y. Shirakawabe[2], T. Kaito[2] and H. Namatsu[1] ([1] NTT Basic Research Labs., NTT Corp., [2] Seiko Instrument Inc.)

S4-11

Damping Energy Through Electrostatic Interaction on Noncontact Atomic Force Microscopy

T. Arai and M. Tomitori (JAIST)

S4-12

High-resolution Imaging by Non-contact AFM Using FM mode

K. Suzuki[1], S. Kitamura[1], T. Sueyoshi[1] and C. B. Mooney[2] ([1]JEOL Ltd., [2] JEOL USA Inc.)

S4-13

Non-Contact Atomic Force Microscopy Study of Si(110) “16x2” Surface

M. Yoshimura and K. Ueda (Toyota Technological Institute)

S4-14

NC-AFM Observation of Si(111)-$\sqrt{21}\times\sqrt{21}$-(Au,Ag) Structure

T. Sato[1], S. Kitamura[2] and A. Ichimiya[3] ([1]Application & Research Center, JEOL LTD., [2] Electron Optics Division, JEOL LTD., [3]Nagoya Univ.)

S4-15

Characterization of Chemically Modified Monolayer Surfaces with Au Pattern on Oxide Substrates by Pulsed-force-mode Atomic Force Microscopy

K. J. Kwak, N. Koga, F. Sato, K. Suga and M. Fujihira (Tokyo Institute of Technology)

S4-16

Molecular Dynamics Simulation of Noncontact Atomic Force Microscopy for Chemical Recognition of Terminal Groups in Self-Assembled Monolayers

B. Burendamba, T.Shiokawa, T.Ohzono and M.Fujihira (Tokyo Institute of Technology)

S4-17

Chemical Modification of Oxide Substrates with Silane Compounds for Atomic Force Microscopy of Combed DNA Molecules

S. Yoda, K. J. Kwak and M. Fujihira (Tokyo Institute of Technology)

S4-18

How to See the Real Potential Energy Landscape of Single Molecular Level Bonding ?

O. Takeuchi[1], M. Fujita[1], S. Yasuda[1], S. Jarvis[2], H. Shigekawa[1] ([1]Univ. of Tsukuba, CREST, [2]Univ. of Dublin)

S4-19

Using Scanning Probe Microscope in Nano-Mechanical Measurement - Investigation of the Radial Compression of Carbon Nanotubes with an SPM

W. Shen[1], B. Jiang[1], B. S. Han[2] and S. Xie[2] ([1]Eastern Michigan Univ., [2]Chinese Academy of Sciences)

S4-20

Frictional Property of Zinc Oxide Coating Films Observed by Lateral Force Microscope

M. Goto[1], A. Kasahara[1], Y. Konishi[2], M. Tosa[1] and K. Yoshihara[1] ([1]NIMS, [2]Univ. of Illinois)

S4-21

Consideration for A Few Molecular Alignments in STM Images of Self-Assembled Monolayers of Fatty Acids and Alkyl Alcohols

S. Katsumata (Iwaki Meisei Univ.)

S4-22

Nanoscale Investigations of Optical and Electrical Properties by Dynamic-mode AFM Using a Conductive PZT Cantilever

N. Satoh[1], K. Kobayashi[2], S. Watanabe[3], T. Fujii[3], T. Horiuchi[1], H. Yamada[1] and K. Matsushige[1, 2] ([1]Kyoto Univ., [2]Int. Innovatio Center, Kyoto Univ., [3]Nicon Co.)

S4-23

Electron Standing Waves in a Vacuum Gap Detected by STM at a Low Tunneling Current

M. Kameda, T. Miura, M. Tomitori and H. Hori (JAIST)

S4-24

STM Observation of Surface State Carrier Modulated by the Photo-exitation

M. Miyao, N. Horiguchi and Y. Amanai (Muroran Institute of Technology)

S4-25

Apparent Tunneling Barrier Height for Au(111) and Pt(111) Surfaces

Y. Yamada, A. Sinsarp, M. Sasaki and S. Yamamoto (Univ. of Tsukuba)

S4-26

Microscopic Study on the Work Function Reduction Induced by Cs-adsorption

A. Sinsarp, Y. Yamada, M. Sasaki and S. Yamamoto (TARA,Univ. of Tsukuba)

S4-27

Structure of Ga/Si(100) by Scanning Tunneling Microscopy

S. Hara[1], K. Fujii[1], K. Irokawa[1], H. Miki[1] and A. Kawazu[2] ([1]Tokyo Univ. of Science, [2]Meiji Univ.)

S4-28

Low Temperature Scanning Tunneling Microscopy on Si(100) Surface

K. Sagisaka, M. Kitahara and D. Fujita (NIMS)

S4-29

P(2x2)-c(4x2) Phase Transition of Si(100) Low Temperature Surface Directly Observed by LEED/STM

S. Yoshida[1], K. Hata[1], O. Takeuchi[1], M. Matsumoto[2], T. Okano[2], T. Nagamura[3] and H. Shigekawa[1] ([1]Univ. of Tsukuba, CREST, [2]Univ. of Tokyo, [3]Unisoku Co.,Ltd)

S4-30

Si(100) Low Temperature Structures with Rare Gas Atoms Studied by Scanning Tunneling Microscopy

T. Kimura, S. Yoshida, O. Takeuchi and H. Shigekawa (Univ. of Tsukuba, CREST)

S4-31

Scanning Tunneling Spectroscopy Measurement of Au Particles on a Hydrogen Terminated Si(100) Surface

T. Miura, M. Kameda, Y. Yamamoto, T. Arai, M. Tomitori and H. Hori (JAIST)

S4-32

Effect of Substrate Structure on the Shape of Self-organized AI Nanoclusters Formed on Si(100) Surface Upon Hydrogen Exposure

K. Oura[1], S. Itou[1], O. Kubo[1], N. Yamaoka[1], A. Nishiba[1], M. Katayama[1], A. A. Saranin[2] and A. V. Zotov[3] ([1]Osaka Univ., [2]Institute of Automation and Control Processes, [3]Vadivostok State Univ. of Economics and Service)

S4-33

Scanning Tunneling Microscopy Study of Quantum Dots Self-formed in GaAs/InAs Short-period Superlattices Grown on InP(411)

S. Hasegawa, J. Mori, T. Nakano, Y. Osumi and H. Asahi (Osaka Univ.)

S4-34

A Photo-Communication via a Molecular Network of π-Conjugated Polymer Chains: Simultaneous-Imaging of Structure and Function in Single Molecules

K. Shinohara[1, 2], T. Suzuki[3] and H. Higuchi[2, 3] ([1]JAIST, [2]CIR, Tohoku Univ., [3]Tohoku Univ)

S4-35

Multiple Conductive Switching of Azobenzene Molecule Embedded in Alkanethiol SAM

S. Yasuda[1], T. Nakamura[2], M. Matsumoto[2] and H. Shigekawa[1] ([1]Univ. of Tsukuba, CREST, [2]AIST)

S4-36

Protonation Induced Conductance Change of Redox-Active Ruthenium (II) Complexes

K. Miyake[1], T. Ishida[1], H. Shigekawa[2], M. Inoue[3], M. Haga[3] and S. Sasaki[1] ([1]AIST, [2]Univ. of Tsukuba, CREST, [3]Chuo Univ.)

S4-37

Superstructure of Cyclohexanethiol Self-Assembled Monolayers on Au(111)

J. Noh, K. Nakajima and M. Hara (RIKEN)

S4-38

Study of Pheromone Molecules by Scanning Tunneling Microscopy

K. Kawazu[1], K. Nakajima[2], S. Tatsuki[1] and M. Hara[2] ([1]Univ. of Tokyo, [2]RIKEN)

S4-39

Structure of Adsorbed Porphyrin Chains

A.Takagi[1,2], Y.Yanagawa[1], T.Matsumoto[1,2], and T.Kawai[1]([1]Osaka, Univ., [2]CREST, JST)

S4-40

Charge Transfer Force Microscopy / Spectroscopy and their Application for Molecular Systems

Y. Naitoh[1], T. Matsumoto[1, 2] , T. Kawai[1] ([1]ISIR, Osaka Univ., [2]CREST)

S4-41

Nanoscale Electrical Properties of the Molecular Films in the Vicinity of Platinum Ultrathin Film Electrode

T. Miyazaki[1], K. Kobayashi[2], K. Ishida[1], T. Horiuchi[1], H. Yamada[1], K. Matsushige[1, 2] and S. Hotta[3] ([1]Kyoto Univ., [2]Int. Innovation center, Kyoto Univ., [3]IRI, Kashiwa Lab.)

S4-42

Single-molecule Reaction of Benzene on Cu(110) by Tunneling Electrons

Y. Fujita[1], Y. Kim[2], Y. Sainoo[2, 3], T. Komeda[2], H. Shigekawa[3] and M. Kawai[2] ([1]Univ. of Gakushuin, [2]RIKEN, [3]Univ. of Tsukuba, CREST)

S4-43

Adsorption of 1,3-butadiene on Pd(110) at Room and Cryogenic Temperature: Discrimination of Adsorption State Using STM and IETS

S. Katano[1, 2], Y. Kim[1], T. Komeda[1], H. S. Kato[1] and M. Kawai[1] ([1]RIKEN, [2]Tokyo Institute of Technology)

S4-44

Manipulation of Single Cis-2-butene Molecule by Vibrational Excitation with Tunneling Electrons

Y. Sainoo[1,2], Y. Kim[2], T. Komeda[2], M. Kawai[2] and H. Shigekawa[1] ([1]Univ. of Tsukuba, CREST, [2]RIKEN)

S4-45

Local Structural Change Caused by Light Irradiation on TiO_2 (110) Surface Observed by Scanning Tunneling Microscopy

Y. J. Li, T. Matsumoto, N. Gu and M. Komiyama (Inst. Mol. Sci. NRI)