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Session 4: Nano Materials (nano-tubes, nanowires, nanoparticles, nano-dots etc.) (13:15 ～ 17:45)

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Break (15:30 ～ 16:00)

Chair: H. Shinohara *(Nagoya Univ.)*

Auxiliary Hall C

Session 9: Tools and standards for micro/nano analysis (13:15 ～ 15:30)
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Session 10: Colloidal chemistry and nano chemistry (supramolecules, biomaterials, and membrane) (16:00 ～ 17:45)
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Exhibition Hall, BF

Poster Session 1 (16:00 ～ 18:00)

Chair: T. Ishida *(AIST)*

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Session 2: Dynamical phenomena at surfaces

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Session 11: Surface chemistry and catalysis

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Session 13: Biological applications of nanotech. and surface science

Nov. 15, 2005 (Tue.)

Conference Room A

Session 8: Characterization of novel surface/interface- and nano-structures (9:00 ～ 12:50)

Chair: S. Hasegawa *(Univ. of Tokyo)*

9:00 Tu-A1 Resistance measurements of cobalt silicide nanowires epitaxially grown on Si(110)
H. Okino[1], I. Matsuda[1], R. Hobara[1], Y. Hosomura[1], Z. He[2], P.A. Bennett[2] and S. Hasegawa[1],
[1] Univ. of Tokyo, Japan and [2] Arizona State Univ., USA 187

9:15 Tu-A2 Observation of screened coulomb potential on the Si(111)-$\sqrt{3}\times\sqrt{3}$-Ag Surface using scanning tunneling spectroscopy
M. Ono[1], Y. Nishigata[1], T. Nishio[1], T. Eguchi[1] and Y. Hasegawa[1,2],
[1] Univ. of Tokyo and [2] PRESTO, JST, Japan 188

9:30 Tu-A3 Dynamic Behaviors of Silver Clusters on Caron Nanotubes
Y.-C. Chang[1], Y.H. Liao[1], L.W. Huang[1], C.S. Chang[1], T.T. Tsong[1] and T. Hsu[2],
[1] Inst. of Physics and [2] National Tsing-Hua Univ., Taiwan 189

9:45 Tu-A4 Theoretical study of the influence of a Na cluster on local tunneling barrier height on an Al(100) surface
H. Totsuka[1,3], S. Furuya[2,3] and S. Watanabe[2,3], *[1] Nihon Univ., [2] Univ. of Tokyo and [3] CREST, Japan* 190

10:00 Tu-A5(I) Novel Properties of Pb Thin Films Modulated by Quantum Size Effects **(Invited)**
Q.-K. Xue, *[1] The Chinese Academy of Sciences and [2] Tsinghua Univ., China* 191

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Chair: Q.-K. Xue *(Inst. of Phys., Beijing)*

10:50 Tu-A6(I) Coherent Electron Sources and their applications **(Invited)**
C. Oshima, *Waseda Univ., Japan* 192

11:20 Tu-A7(I) The structures of low-index GaP and InP surfaces using LEED, STM, and PES **(Invited)**
Y. Fukuda, M. Shimomura, N. Kadotani and N. Sanada, *Shizuoka Univ., Japan* 193

11:50 Tu-A8 Interaction between the adatoms-induced localized state and the free-electron-like surface state
C. Liu, I. Matsuda, T. Hirahara and S. Hasegawa, *Univ. of Tokyo, Japan* 194

12:05 Tu-A9 Two-Photon Resonance in Optical Second Harmonic Generation (SHG) From Quantum Well States in Ultra-thin Ag Films grown on Si(111) Surfaces
H. Hirayama and M. Watai, *Tokyo Inst. of Tech., Japan* 195

12:20 Tu-A10 Fine structure of Si valence subbands
S.N. Takeda[1,2], N. Higashi[1], M. Nishide[1] and H. Daimon[1,2],
[1] NAIST and [2] CREST-JST, Japan 196

12:35 Tu-A11 Temperature Dependence of Contrast in PEEM Images of Si(100) with Lateral *p-n* Junction
H. Fukidome, M. Yoshimura and K. Ueda, *Toyota Technological Inst., Japan* 197

Conference Room B

Session 4: Nano Materials (nano-tubes, nanowires, nanoparticles, nano-dots etc.) (9:00 ～ 10:30)

Chair: K. Miki *(NIMS)*

9:00 Tu-B1 Structural, Electronic, and Optical Properties of Silicon Nanowires: A First-principles Study
T. Akiyama, K. Nakamura and T. Ito, *Mie Univ., Japan* 198

9:15 Tu-B2 Direct observation of two Peierls distortions within an atomic scale wire; Si(553)-Au
K.D. Ryang[1], P.G. Kang[1], S. Jeong[2] and H.W. Yeom[1],
[1] Yonsei Univ. and [2] Chonbuk National Univ., Korea 199

9:30 Tu-B3(I) Synthesis and application of vapour phase grown nanostructures **(Invited)**
G.W. Ho and M.E. Welland, *Univ. of Cambridge, UK* 200

10:00 Tu-B4 Resistance at an incommensurate interface between a helical-multi shell nanowire and FCC electrode
Y. Oshima[1,2] and K. Takayanagi[1,2], *[1] Tokyo Inst. of Tech. and [2] CREST, JST, Japan* 201

Session 12: Photochemical reactions at surfaces (10:50 ～ 12:50)

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Session 2: Dynamical phenomena at surfaces (9:00 ～ 12:50)

Chair: T. Komeda *(Tohoku Univ.)*

Break (10:30 ～ 10:50)

Chair: M. Bonn *(Leiden Univ.)*

Exhibition Hall, BF

Poster Session 2 (18:00 ～ 20:00)
Chair: A. Ikai *(Tokyo Inst. of Tech.)*

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Session 5: Self-assembly and self-organization for nanostructure formation, and characterization

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Session 12: Photochemical reactions at surfaces

Nov. 16, 2005 (Wed.)

Conference Room A

Session 1: Theoretical approaches to surface- and nano-structures and properties (9:00 ～ 12:50)

Chair: K. Shiraishi *(Univ. of Tsukuba)*

Break (10:45 ～ 11:05)

Chair: D. Vanderbilt *(Rutgers Univ.)*

Conference Room B

Session 11: Surface chemistry and catalysis (9:00 ～ 10:45)

Chair: Y. Inoue *(Nagaoka Univ. of Tech.)*

Session 7: Device applications of bio, metal, ceramics and hybrid, and organic films (11:05 ～ 12:50)

Chair: M. Nakamura *(Chiba Univ.)*

Auxiliary Hall C

Session 5: Self-assembly and self-organization for nanostructure formation, and characterization (9:00 ～ 12:50)

Chair: J. K. Kim *(POSTEC)*

Break (10:45 ～ 11:05)

Chair: M.C. Hersam *(Northwestern Univ.)*

11:05 We-C7(I) Nonlocal bond-angle manipulation by injected tunneling carriers on clean Ge(001) surface **(Invited)**
F. Komori, Y. Takagi, Y. Yoshimoto and K. Nakatsuji, *Univ. of Tokyo, Japan* 370

11:35 We-C8 Low energy electron microscopy study of self-assembling Ge nanostructures on clean and Ga patterned Si(113)
T. Clausen[1], Th. Schmidt[1], J.I. Flege[1], A. Locatelli[2], T.O. Mentes[2], S. Heun[3], F. Guo[4] and J. Falta[1], *[1] Univ. of Bremen, Germany, [2] Sincrotrone Trieste, [3] Lab. Nazionale TASC-INFM, Italy and [4] SPring-8/JASRI, Japan* 371

11:50 We-C9 Local electronic structure of Al nano-cluster fabricated on Si(111)7×7 surface
H. Narita, M. Nakatake, T. Xie, T. Moko, A. Kimura, S. Qiao, H. Namatame and M. Taniguchi, *Hiroshima Univ., Japan* 372

12:05 We-C10 STM study of the structure BC_3 sheet on NbB_2(0001) substrate
A. Ueno[1], T. Fujita[1], M. Matsue[1], F. Patthey[2], H.-C. Ploight[2], W.-D. Schneider[2] and C. Oshima[1], *[1] Waseda Univ., Japan and [2] École Polytechnique Fédérale de Lausanne, Switzerland* 373

12:20 We-C11 d-band broadening on Cu(100) due to the compressive strain
D. Sekiba, Y. Yoshimoto, K. Nakatsuji and F. Komori, *Univ. of Tokyo, Japan*..... 374

12:35 We-C12 Self-organized formation of the ordered nanostructure arrays on Si surfaces
V.G. Lifshits[1], A.A. Saranin[1], A.V. Zotov[1], M. Katayama[2] and K. Oura[2], *[1] Inst. of Autom. & Control Proc., Russia and [2] Osaka Univ., Japan*..... 375

Conference Room A

Session 1: Theoretical approaches to surface- and nano-structures and properties (14:00 ～ 15:45)

Chair: S. Tsuneyuki *(Univ. of Tokyo)*

14:00 We-A13 Theoretical modeling of a phase switching molecule on Au(111) surface
B. Das and S. Abe, *AIST, Japan* 376

14:15 We-A14 Electrical detection of chemical reactions on nano-space
K. Yokota, M. Taniguchi and T. Kawai, *Osaka Univ., Japan*..... 377

14:30 We-A15 Tight-Binding Calculation of Electronic Conduction through Tamm Surface States Measured with Micro-Multi-Point STM Probes
R. Suzuki[1,2], M. Noda[1,2], T. Tada[1,2] and S. Watanabe[1,2], *[1] Univ. of Tokyo and [2] CREST, JST, Japan* 378

14:45 We-A16 Theoretical study of the electron-vibration coupling on electron transfer in molecular bridges
K. Mitsutake[1] and M. Tsukada[2], *[1] Canon Inc. and [2] Waseda Univ., Japan* 379

15:00 We-A17 Ionization-Mediated Association and Dissociation of C_{60} Molecules
S. Tsukamoto[1], M. Nakaya[1,2,3], T. Nakayama[1,2,4] and M. Aono[1,2,3], *[1] NIMS, [2] JST, [3] Osaka Univ. and [4] Univ. of Tsukuba, Japan*..... 380

15:15 We-A18 Accelerated Quantum Chemical Molecular Dynamics Simulation on the Platinum Clusters by Graphite Substrates as Polymer Electrolyte Fuel Cell Electrode
H. Zhong[1], C. Jung[1], M. Koyama[1], H. Tsuboi[1], A. Endou[1], M. Kubo[1,2], E. Broclawik[1] and A. Miyamoto[1], *[1] Tohoku Univ. and [2] PRESTO, JST, Japan*..... 381

15:30 We-A19 Periodic Density Functional Theory and Quantum Chemical Molecular Dynamics Study on Catalytic Properties in γ-Al_2O_3 –Supported Precious Metal Catalyst
R. Ishimoto[1], C. Jung[1], H. Tsuboi[1], M. Koyama[1], A. Endou[1], M. Kubo[1,2] and A. Miyamoto[1], *[1] Tohoku Univ. and [2] PRESTO, JST, Japan* 382

Break (15:45 ～ 16:15)

Session 6: Micro/nano-fabrications for device applications: ULSI fabrication processes, electronic, magnetic and optical devices (16:15 ～ 18:00)

Chair: S. Miyazaki *(Hiroshima Univ.)*

16:15 We-A20 Interface formations between $Pr_{0.7}Ca_{0.3}MnO_3$ epitaxial film and various metal electrodes toward resistance random access memory
K. Tsubouchi[1], I. Ohkubo[1], H. Kumigashira[1], M. Oshima[1], K. Itaka[1,4], Y. Matsumoto[2,4], T. Ohnishi[1], M. Lippmaa[1] and H. Koinuma[1,3,4], *[1] Univ. of Tokyo, [2] Tokyo Inst. of Tech., [3] NIMS and [4] CREST, JST, Japan* 383

16:30 We-A21 Smoothing of the etched surface of tunnel barrier by precise selection of MTJ capping layer
E. Kitagawa[1], M. Yoshikawa[1], M. Amano[1], S. Takahashi[1], T. Nagase[1], K. Nishiyama[1], Y. Asao[1], H. Hada[2], S. Tahara[2] and H. Yoda[1], *[1] Toshiba Corp. and [2] NEC Corp., Japan* 384

16:45 We-A22 Field electron emission from screen printed double-walled carbon nanotube paste by grinding treatment
S. Honda, H. Machida, S. Ohkura, K. Oura and M. Katayama, *Osaka Univ., Japan* 385

17:00 We-A23 Field-Effect Transistors with TiO_2 channels
M. Katayama[1,2], S. Ikesaka[3], J. Kuwano[3], Y. Yamamoto[1,4], Y. Matsumoto[1,2] and H. Koinuma[1,2,5], *[1] Tokyo Inst. of Tech., [2] CREST, JST, [3] Tokyo Univ. of Science, [4] Asahi Glass Co. Ltd. and [5] COMET, NIMS, Japan* 386

17:15 We-A24 Hydrogen Response of Pd Schottky Diodes Formed on AlGaN/GaN Heterostructure
K. Matsuo, T. Kimura, T. Hashizume and H. Hasegawa, *Hokkaido Univ., Japan* 387

17:30 We-A25(I) Self-assembly and properties of semiconductor nanowires **(Invited)**
L. Samuelson, *Lund Univ., Sweden* 388

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Session 13: Biological applications of nanotech. and surface science (14:00 ～ 17:45)

Chair: J. J. Ramsden *(Univ. Basel)*

14:00 We-B12 Cell Adhesion on Self-assembled Alkanethiol Monolayers with Various Functional Groups
Y. Arima and H. Iwata, *Kyoto Univ., Japan* 389

14:15 We-B13 Gelatin nanoparticles surface modified with Avidin-biotinylated EGF for Lung cancer targeting
C.-L. Tseng and F.-H. Lin, *National Taiwan Univ., Taiwan* 390

14:30 We-B14(I) Nano-Surface Structure of Temperature-Responsive Polymers for Cells and Tissues Engineering **(Invited)**
T. Okano, *Tokyo Women's Medical Univ., Japan* 391

15:00 We-B15(I) Structural and Functional Analysis of Genome Maintenance: A Single DNA Molecule Approach **(Invited)**
A. Bensimon, *Genome Stability Unit, France* 392

15:30 We-B16 Exploring Lipid-Lipid and Lipid-Protein Interactions by Force Spectroscopy
R. Afrin, M. Jacobson, T. Tamanaka and A. Ikai, *Tokyo Inst. of Tech., Japan* 393

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Chair: M. Niwano *(Tohoku Univ.)*

16:15 We-B17 Detection of DNA hybridization on porous silicon surface by infrared microspectroscopy
R. Yamaguchi, K. Ishibashi, K. Miyamoto, Y. Kimura, H. Ishii and M. Niwano, *Tohoku Univ., Japan* 394

16:30 We-B18 Assembly and vibrational spectroscopy of biomolecules on gold nanostructures
T. Nagao[1,4], D. Enders[2], C. Ohbuchi[4], A. Pucci[2], A. Wei[3] and T. Nakayama[1,4], *[1] NIMS, Japan, [2] Univ. Heidelberg, Germany, [3] Purdue Univ., USA and [4] ICORP, JST, Japan* 395

16:45 We-B19(I) Probing the growth of nanostructures in real time **(Invited)**
J.J. Ramsden, *Cranfield Univ., UK* 396

17:15 We-B20 Imaging of Native Membrane Protein Surface Using Frequency-Modulation Atomic Force Microscopy (FM-AFM) in Liquid Environment
Y. Hirata[1], T. Fukuma[2], T. Kajita[2], K. Kobayashi[2], O. Niwa[1], K. Matsushige[2] and H. Yamada[2], *[1] AIST and [2] Kyoto Univ., Japan* 397

Auxiliary Hall C

Session 3: Atomic-scale controlled surfaces, thin films and nanostructures (14:00 ～ 17:45)

Chair: M. Aono *(NIMS)*

Break (15:45 ～ 16:15)

Chair: A. Heinrich *(IBM)*

Exhibition Hall, BF

Poster Session 3 (18:00 ～ 20:00)

Chair: S. Watanabe *(Univ. of Tokyo)*

Session 1: Theoretical approaches to surface- and nano-structures and properties

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Session 6: Micro/nano-fabrications for device applications: ULSI fabrication processes, electronic, magnetic and optical devices

Session 11: Surface chemistry and catalysis

Session 13: Biological applications of nanotech. and surface science

Nov. 17, 2005 (Thu.)

Conference Room A

Session 5: Self-assembly and self-organization for nanostructure formation, and characterization (9:00 ～ 10:30)

Chair: F. Komori *(Univ. of Tokyo)*

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Session 6: Micro/nano-fabrications for device applications: ULSI fabrication processes, electronic, magnetic and optical devices (10:50 ～ 12:20)

Chair: M. Oshima *(Univ. of Tokyo)*

Conference Room B

Session 11: Surface chemistry and catalysis (9:00 ～ 12:20)

Chair: S. F. Bent *(Stanford Univ.)*

Break (10:30 ～ 10:50)

Chair: M. Scheffler *(FHI)*

10:15 Th-B5 Preferential reduction of FeO(111) islands by gas phase atomic hydrogen on a α-Fe_2O_3(0001) thin film with biphase surface structure
W. Huang[1], W. Ranke[2] and R. Schlögl[2], *[1] Univ. of Sci. and Technolo. of China, China and [2] Fritz-Haber-Inst. der MPG, Germany* 548

10:50 Th-B6 Catalytic reactions of formic acid on TiO_2(110) and (001) surfaces studied by STM
H. Morikawa[1], M. Aizawa[1], H. Ariga[1], Y. Morikawa[2] and Y. Iwasawa[1], *[1] Univ. of Tokyo and [2] Osaka Univ., Japan* 549

11:05 Th-B7 Production of Propene Oxide by a Homogeneous Chain Reaction Initiated by a Surface Radical Generator
N. Mimura[1,2], Z. Song[1], S. Tsubota[1], H. Yamashita[2] and S.T. Oyama[1,3], *[1] AIST, [2] Osaka Univ., Japan and [3] Virginia Tech, USA* 550

11:20 Th-B8 The first layer of water (D_2O) on Rh(111)
A. Beniya[1], S. Yamamoto[1,2], K. Mukai[1], Y. Yamashita[1] and J. Yoshinobu[1], *[1] Univ. of Tokyo, Japan and [2] Stanford Synchrotron Radiation Lab., USA* 551

11:35 Th-B9 P-type activation of Mg-doped $Al_xGa_{1-x}N$ using Ni films
T. Naono[1], H. Fujioka[1,2], J. Okabayashi[1], M. Oshima[1] and H. Miki[3], *[1] Univ. of Tokyo, [2] Kanagawa Academy of Sci. and Tech. and [3] Showa Denko K.K., Japan* 552

11:50 Th-B10(I) Catalyst Surfaces Activated by Acoustic Wave Effects: Artificial Control of Activity and Selectivity **(Invited)**
Y. Inoue, *Nagaoka Univ. of Technology, Japan* 553

Auxiliary Hall C

Session 3: Atomic-scale controlled surfaces, thin films and nanostructures (9:00 ～ 12:20)

Chair: H. Sakama *(Sophia Univ.)*

9:00 Th-C1 Atomic structures and electronic properties of Bi nanofilms
M. Saito[1], M. Maekawa[1], T. Nagao[2], S. Yaginuma[2], T. Nakayama[2] and T. Ohno[2], *[1] Kanazawa Univ. and [2] NIMS, Japan* 554

9:15 Th-C2 STM Study of Low-Temperature-Grown Ag Films on Si(111)-4×1 In
C. Ohbuchi[1], T. Uchihashi[1,2], S. Tsukamoto[2] and T. Nakayama[1,2], *[1] JST and [2] NIMS, Japan*... 555

9:30 Th-C3 Self-assembly of One-Dimensional Nanostructures on Atomically wWell-Defined Steps on the Si(111)-7×7
T. Sekiguchi[1,2], S. Yoshida[1] and K.M. Itoh[1,2], *[1] Keio Univ. and [2] CREST-JST, Japan* 556

9:45 Th-C4 Surface-state 1D plasmon on the Si(557)-Au surface
T. Nagao[1,4], S. Yaginuma[1], T. Inaoka[2], S. Hasegawa[3] and T. Sakurai[1], *[1] Tohoku Univ., [2] Iwate Univ., [3] Univ. of Tokyo and [4] ICORP, JST, Japan* 557

10:00 Th-C5(I) Instable and fluctuating atomic wires on Si surfaces **(Invited)**
H.W. Yeom, *Yonsei Univ., Korea* 558

Break (10:30 ～ 10:50)

Chair: H. W. Yeom *(Yonsei Univ.)*

10:50 Th-C6 Transition metal atoms absorbed fct-Fe/Cu(001) studied by X-ray magnetic circular dichroism
K. Yaji, M. Sawada, M. Nagira, A. Kimura, H. Namatame and M. Taniguchi, *Hiroshima Univ., Japan* 559

11:05 Th-C7 Spin resolved surface electronic band structure of fcc Co thin film on Cu(001)
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11:20 Th-C8 GaN(0001) surface structures and growth of InGaN quantum dots studied by STM
S. Gangopadhyay, T. Schmidt, S. Einfeldt, T. Yamaguchi, D. Hommel and J. Falta, *Univ. of Bremen, Germany* 561

Closing (12:20 ～ 13:00)

Chair: H. Onishi *(Kobe Univ.)*