

JRSSS-10

**The 10th Japan-Russia Seminar on
Semiconductor Surfaces
Together with Asian Countries
Program**

University of Tokyo, Hongo, Tokyo, September 26 – 28



Organized by

The Surface Science Society of Japan

Supported by

**Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan,
and**

Far-Eastern Branch of Russian Academy of Sciences

September 25 (Tuesday)

Afternoon Arrival

Hotel: Tokyo Garden Palace Tel 03-3813-6211

http://www.hotelgp-tokyo.com/english/sty01_e.html

18:45–20:00 Welcome Dinner Fuku no ya 福の家 Tel 03-3295-4175

<http://r.gnavi.co.jp/g162010/>

September 26 (Wednesday)

(8:30–9:00) Registration

(9:00–9:10) Opening Address

Shuji Hasegawa and Alexander A. Saranin

Session A (9:10–10:40) Chair: Alexander A. Saranin (IACP, RAS)

A-1 (9:10–9:40)

Atsuya Ohshiro, Keisuke Iryo, Yuki Aoki, Kan Nakatsuji, and Hiroyuki Hirayama
(Upgraded)

“Epitaxial growth of Silicene on ultra-thin Ag(111) films”

A-2 (9:40–10:00)

T. Kajiwara, Y. Nakamori, M. Takaki, Y. Hagihara, A. Visikovskiy, and S. Tanaka

“MBE growth of graphene nanoribbons on vicinal SiC(0001) surface”

A-3 (10:00–10:20)

Fumio Komori, Kan Nakatsuji, T. Yoshimura, K. Morita, S. Tanaka

“Growth and electronic states of graphene on one-dimensionally-modulated SiC(0001) Substrates”

A-4 (10:20–10:40)

Toru Hirahara, and Shuji Hasegawa

“Ultrathin Bi films: Electronic structure and topological properties”

(10:40–11:00) Coffee Break

Session B (11:00–12:50), Chair: Fumio Komori (Univ. Tokyo)

B-1 (11:00–11:30)

Yoshiyuki Ohtsubo, Shinichiro Hatta, and Tetsuya Aruga (Upgraded)

“Spin-Polarized Electronic States at Surfaces and Interfaces of Ge”

B-2 (11:30–11:50)

D.V. Gruznev, A.V. Matetskiy, L.V. Bondarenko, A.V. Zotov, A.A. Saranin

“Pb-induced wire structures on the surface of Bi₂Se₃”

B-3 (11:50–12:10)

Yan Jun Li, Oozawa Shuhei, Yoshitaka Naitoh and Yasuhiro Sugawara

“Identification of Al Atoms with Different Coordination on Al₂O₃/NiAl(110) Surface with NC-AFM”

B-4 (12:10-12:30)

S. Yoshida, M. Yokota, O. Takeuchi and H. Shigekawa

“Atomic scale study on carrier-recombination dynamics at semiconductor gap states using time-resolved STM”

B-5 (12:30-12:50)

M. Ogawa, S. Yamamoto, R. Yukawa, R. Hobara, L.-C. Huang, R.-Y. Liu, S.-J. Tang, and I. Matsuda

“High-Density Carrier Dynamics in Semiconductor Surfaces”

(12:50–14:30) Lunch

Session C (14:30–16:10), Chair: Yukichi Shigeta (Yokohama City Univ.)

C-1 (14:30-15:00)

Y. L. Wang, M. Y. Lai, J. P. Chou, C. M. Wei, A. V. Zotov, A. A. Saranin (Invited)

“On the Discovery and Fun of Surface Magic-Number Clusters”

C-2 (15:00-15:20)

A.A. Saranin, A.V. Matetskiy, L.V. Bondarenko, D.V. Gruznev, A.V. Zotov

“C₆₀ Fullerene Interaction with Si(111) $\sqrt{3}\times\sqrt{3}$ -Ag Surface”

C-3 (15:20-15:40)

Tetsuroh Shirasawa, Masanori Ohyama, Wolfgang Voegeli, and Toshio Takahashi

“A Molecular Arrangement of Pentacene in UltraThin Film Revealed by Surface X-ray Diffraction”

C-4 (15:40-16:10)

A.V. Zotov, D.V. Gruznev, A.V. Matetskiy, L.V. Bondarenko, O.A. Utas, A.A.

Saranin, M.Y.Lai, J.P. Chou, C.M. Wei, and Y.L. Wang (Upgraded)

“Formation of C₆₀ magic islands mediated by a dynamic Moiré pattern”

(16:10–16:30) Coffee Break

Session D (16:30–18:30), Chair: V.G. Kotlyar (IACP, RAS)

D-1 (16:30-16:50)

Kazushi Miki, Martin Setvín, Veronika Bra'zdova', Kota Tomatsu, Kan Nakatsuji, Fumio Komori, and David R. Bowler

“Electronic structure of Si(110)-(16×2) studied with scanning tunneling spectroscopy”

D-2 (16:50-17:20)

Tadashi Abukawa (Upgraded)

“New structural model for Si(111)5x2-Au by Weissenberg RHEED”

D-3 (17:20-17:50)

Stephane Yu Matsushita, Kazuki Matsui, Hiroki Kato, Taro Yamada and Shozo Suto (Upgraded)

“Dispersion of Surface Phonons on the Hydrogen-terminated Si(110)-(1x1) Surface”

D-4 (17:50-18:10)

D.L. Goroshko, N.G. Galkin

“Chromium disilicide based nanocomposite: formation and properties”

D-5 (18:10-18:30)

N.G. Galkin, E.A. Chusovitin, D.L. Goroshko, A.V. Shevlyagin, T.S. Shamirzaev and A.K. Gutakovskiy

“Electroluminescence properties of the silicon mesa diodes with iron disilicide nanocrystallites embedded in the p-n junction”

Session P (18:30–20:30) Poster Session with Refreshments

P-1 R. Hill, R. Oiwa, John S. Fletcher, John C. Vickerman

“A New Time of Flight SIMS Instrument for 3-Dimensional Imaging and Analysis Using Cluster Ion Beams”

P-2 K.Aiba, H.Suzuki, and H.Sakama

“The growth of $YBa_2Cu_3O_{7-\delta}$ superconducting thin films”

P-3 Masaki Aitani, Toru Hirahara, and Shuji Hasegawa

“Magnetotransport measurements of ultrathin Bi films on Si(111)”

P-4 N.V. Denisov, A.A. Yakovlev, O.A. Utas, S.G. Azatyan, A.A. Saranin, A.V. Zotov

“Ordered Mn-diluted Au/Si(111) reconstructions”

P-5 Naoya Fukui, Toru Hirahara, and Shuji Hasegawa

“The Surface-State Conduction of a Microstructure Fabricated by Focused Ion Beam”

P-6 Shinsuke Hara, Ryuto Machida, Keisuke Yoshiki, Katsumi Irokawa, Hirofumi Miki, Akira Kawazu, and Hiroki. Fujishiro

“Temperature-Dependent Growth Morphology of GaSb Islands on Ga/Si(111)”

P-7 H. Hoshiba, T. Arai, I. Tanuma, R. Tokuyasu, and H. Sakama

“The growth of $SrRuO_3$ thin films on $SrTiO_3(111)$ ”

P-8 Shinya Kajigaya, Hiroki Komurasaki, Takahiro Tsukamoto and Toshio Ogino

“Effects of Interfacial Water on Raman Spectra of Graphene Films Deposited on the Substrates under Various Relative Humidities”

P-9 K. Kawanishi, K. Sato and T. Abukawa

“Streak-camera RHEED for surface structure dynamics”

P-10 Katsuyoshi Kobayashi

“Transmission Properties of Electrons in Topological Surface States through Atomic Steps of Sb Surfaces”

P-11 V.G. Kotlyar, D.A. Olyanich, T.V. Utas, A.V. Zotov, A.A. Saranin

“Self-assembly of C_{60} fullerenes on Si(111)4x1-In surface”

P-12 Daigo Kusano, Masato Emori and Hiroshi Sakama

“Properties of N-doped TiO_2 films prepared by pulsed laser deposition and sol-gel method”

P-13 Sho Nakajima, Yuki Aoki, Kan Nakatsuji, and Hiroyuki Hirayama

“Hydrogen uptake in Pd-Ag superlattice structural thin film by thermal desorption”

P-14 D.A. Olyanich, T.V. Utas, V.G. Kotlyar, A.V. Zotov, A.A. Saranin

- “Manipulation of fullerenes on the Si(111) $\sqrt{3}\times\sqrt{3}$ -(AuIn) reconstruction by STM probe”*
- P-15 Keisuke Sagisaka, Daisuke Fujita¹, and David Bowler
“STM study of phosphorus on Si(100) surface”
- P-16 Kaoru Sasakawa, Kaoru Nakajima, Motofumi Suzuki and Kenji Kimura
“Effect of multiple scattering on high-resolution Rutherford backscattering spectroscopy”
- P-17 Junya Nakata, Takuhiro Sugiyama, Kouji Koyama, Aki Tosaka, Yukichi Shigeta
“Structure of GaN (0001) surface prepared by CMP observed with RHEED”
- P-18 Terufusa Shirai, Toru Hirahara, and Shuji Hasegawa
“Study of the Quantum-Well States in Ultrathin Ag Films covered with Silicene”
- P-19 Toshiyuki Takami, Ryosuke Seino, and Toshio Ogino
“Graphene Growth on insulating substrates from solid sources with a metal catalyst overlayer”
- P-20 Rajanish N. Tiwari, M. Ishihara, and Masamichi Yoshimura
“Thermal transformation of polymer to graphene films at partially low temperature”
- P-21 Takeshi Tono, Yoichi Ueda, Toru Hirahara, and Shuji Hasegawa
“Measurements of non-integer dimensional transports in Si(110) 2 \times 5-Au”
- P-22 A.A. Yakovlev, N.V. Denisov, O.A. Utas, S.G. Azatyan, A.V. Zotov, A.A. Saranin
“Formation of Ag-Bi structures on the Si(111) α - $\sqrt{3}\times\sqrt{3}$ -Bi surface”
- P-23 Yoshinobu Ohashi, Hideki Yoshioka, Toshio Kiyokawa and Shin-Ichi Yamamoto
“Phase-Controlled Epitaxial Growth of MgO Composites with MgO Particles Dispersion by MOD Method”
- P-24 T. Nakagawa, H. Yoshioka, S.-I. Yamamoto
“Photoelectric Emission Properties and Crystallization of Metal Oxide Thin Films with Spring-like Carbon Nano-Coils”
- P-25 Kenji Yamazaki and Toshio Ogino
“Effect of support substrate on chemical doping to graphene in aqueous environment”
- P-26 Shinya Yoshimoto, Yosuke Harada, Takanori Koitaya, Kazutaka Fujimaki, Yuichiro Shiozawa, Kozo Mukai, and Jun Yoshinobu
“Molecular Doping Effect on Si(111) Native Oxide Surface”
- P-27 M. Y. Lai, J. P. Chou, C. M. Wei, Y. L. Wang, O. A. Utas, N. V. Denisov, V. G. Kotlyar, D. Gruznev, A. Matetsky, A. V. Zotov, A. A. Saranin
“Interaction between Two Topological Solitons on a Si(100)-2 \times 1 Surface”

September 27 (Thursday)

Session E (9:00-10:20), Chair: Andrey.V. Zotov (IACP, RAS)

E-1 (9:00-9:30)

Tae Hwan Kim and Han Woong Yeom (Invited)

“Soliton, Topological Excitation, on Atomic Scale Charge Density Wave Wires”

E-2 (9:30-9:50)

L.V. Bondarenko, A.V. Matetskiy, D.V. Gruznev, A.V. Zotov, A.A. Saranin

“Two-dimensional electron gas on $Si(111)\sqrt{3}\times\sqrt{3}$ -(Au,Na) surface”

E-3 (9:50-10:20)

Kan Nakatsuji, Yuya Motomura, Ryota Niikura and Fumio Komori (Upgraded)

“Shape of metallic band at single-domain Au-adsorbed Ge(001) surface studied by angle-resolved photoelectron spectroscopy”

(10:20–10:40) Coffee Break

Session F (10:40-11:50), Chair: Dimitriy.V. Gruznev (IACP, RAS)

F-1 (10:40-11:10)

Takayuki Sekihara, Ryuichi Masutomi, and Tohru Okamoto (Invited)

“Superconductivity of ultrathin metallic films on cleaved GaAs surfaces”

F-2 (11:10-11:30)

Manabu Yamada, Toru Hirahara, Rei Hobara, Shuji Hasegawa

“Surface-state superconductivity measured by a UHV sub-kelvin micro-four-point-probe system under high magnetic field”

F-3 (11:30-11:50)

T. Tominaga, T. Sakamoto, T. Eguchi, Y. Yoshida, and Yukio Hasegawa

“Vortex clustering and giant vortex in nano-size superconductors”

(11:50–13:30) Lunch

Session G (13:30-15:20), Chair: Yukio Hasegawa (Univ. Tokyo)

G-1 (13:30-14:00)

D.A. Tsukanov, M.V. Ryzhkova, E.A. Borisenko, L.V. Bondarenko, D.V. Gruznev, A.V. Zotov, A.A. Saranin (Upgraded)

“Surface conductivity of coadsorbed (Au,Ag)/Si(111) system”

G-2 (14:00-14:20)

Tatsuaki Sawada Tomoko Fujimura and Hiroki Minoda

“Conductivity in the Ag thin films on the Si(111)-In surfaces”

G-3 (14:20-14:40)

A.A. Dimitriev, V.A. Vikulov, T.A. Pisarenko, V.V. Balashev, V.V. Korobtsov

“Thickness dependence of the electrical and magnetotransport properties of magnetite films formed on oxidized silicon surface”

G-4 (14:40-15:00)

V.A. Vikulov, V.V. Balashev, T.A. Pisarenko, A.A. Dimitriev, V.V. Korobtsov
“*Temperature dependant switching effect of the conductivity channel in the silicon MOS structures with thin Fe₃O₄ films*”

G-5 (15:00-15:20)

Masayuki Mori, Yuichiro Yasui, Koji Nakayama, Azusa Kadoda, Taihei Ito, Koichi Maezawa, Chieie Tatsuyama
“*High electron mobility InSb film on Si grown by surface reconstruction controlled epitaxy and its application for MOSFETs*”

(15:20–15:40) Coffee Break

Session H (15:40-17:00), Chair: Hidemi Shigekawa (Tsukuba Univ.)

H-1 (15:40-16:00)

Masahiko Suzuki, Tsuneo Yasue, Takanori Koshikawa, and Ernst Bauer
“*Perpendicular magnetic anisotropy in Co/Ni thin films -Investigation with high brightness and highly spin-polarized LEEM*”

H-2 (16:00-16:20)

T. K. Yamada, S. Schmaus, Y. Yamagishi, A. Bagrets, Y. Nahas, A. Bork, F. Evers, W. Wulfhekel
“*Giant magnetoresistance through a single molecule*”

H-3 (16:20-16:40)

A.V. Matetskiy, D.V. Gruznev, L.V. Bondarenko, O.A. Utas, A.V. Zotov, A.A. Saranin, J.P. Chou, C.M. Wei, and Y.L. Wang
“*Growth of C₆₀ films on Si(111)-h-√3×√3-(Au,In) in terms of kinetic nucleation theory*”

H-4 (16:40-17:00)

M.V. Ryzhkova, D.A. Tsukanov, E.A. Borisenko, L.V. Bondarenko, A.V. Matetskiy, D.V. Gruznev, A.V. Zotov, A.A. Saranin
“*Study of electrical conductivity of Au and Na induced Si(111) surface reconstructions after C₆₀ adsorption*”

(17:00-) Move to Banquet

Yakatabune (Banquet on a boat) 屋形船 <http://www.hamadamaru.com/>

September 28 (Friday)

Session I (9:00-10:20), Chair: Shozo Suto (Tohoku Univ.)

I-1 (9:00-9:30)

Cheng-Rong Hsing and Ching-Ming Wei (Invited)

“Materials Simulations using Quantum Monte Carlo”

I-2 (9:30-9:50)

Yu. V. Luniakov

“DFT simulation of the extra Me adatom diffusion on 1/3 ML Si(111) $\sqrt{3}\times\sqrt{3}$ -Me surfaces”

I-3 (9:50-10:20)

Shozo Kono, Takuya Nohara, Satoshi Abe, Hideyuki Kodama, Kazuhiro Suzuki, Satoshi Koizumi, Tadashi Abukawa, and Atsuhito Sawabe (Upgraded)

“Electron Spectroscopic Determination of Electronic Structures of Phosphorus-Doped n-type Heteroepitaxial Diamond (001) Surface and Junction”

(10:20–10:40) Coffee Break

Session J (10:40-11:50), Chair: Vladimir V. Korobtsov (IACP, RAS)

J-1 (10:40-11:00)

Yuki Aoki, Sho Nakajima, Kan Nakatsuji, and Hiroyuki Hirayama

“Hydrogen chemisorption on Pd thin film by thermal desorption spectroscopy”

J-2 (11:00-11:20)

Ryu Yukawa, Susumu Yamamoto, Kenichi Ozawa, Marie D'Angelo, Manami Ogawa, Mathieu Silly, Fausto Sirotti, and Iwao Matsuda

“Polarization-dependent angle-resolved photoemission studies of hydrogen-induced transition metal oxides”

J-3 (11:20-11:50)

K. Takeyasu, K. Fukada, S. Ogura, M Matsumoto and K. Fukutani

“Effects of hydrogen adsorption on the electronic structure of TiO₂ and SrTiO₃ surfaces”

11:50-12:00 Closing Address

12:00-12:30 Lab Tour

12:30-18:00 Free Time

18:00-20:00 Farewell Party with Shabushabu

Hassan Roppongi 八山 六本木 <http://www.hotpepper.jp/strJ000011075/>

September 29 (Saturday)

Checkout & Departure