YOUSOO KIM

Curriculum Vitae

Lab Address

Surface and Interface Science Laboratory, RIKEN,
2-1 Hirosawa, Wako, Saitama 351-0198, Japan
TEL : +81-48-467-4073
FAX : +81-48-467-1945
Email Address : ykim@riken.jp
URL : http://www.riken.jp/Kimlab



Current Positions

Chief Scientist
Director of Surface and Interface Science Laboratory, RIKEN

Adjunct Professor, Dept. Electronic Chemistry, Tokyo Institute of Technology
Adjunct Professor, Div. of Materials Science, Saitama University
Adjunct Professor, Dept. Applied Chemistry, Kyushu University
Adjunct Professor, Dept. Chemistry, Gwangju Institute of Science and Technology
Adjunct Professor, Dept. Chemistry, Seoul National University
Adjunct Professor, College of Science, University of the Philippines Diliman

Education

1987-1991 : Department of Chemistry, Seoul National University (B.S.)
1991-1993 : Department of Chemistry, Seoul National University (M.S.)
(Advisor; Professor Hasuck Kim)
Thesis Title: "Study on electrochemical behaviors of heteropolymolybdates whose heteroatom was substituted by transition metals "
1996-1999 : Department of Applied Chemistry, University of Tokyo (Dr. Eng,)
(Advisor; Professor Akira Fujishima)
Dissertation title: "Optical manipulation of fullerene-based materials"

Professional Positions

1999-2002: Special Postdoctoral Researcher, RIKEN
2002-2006: Research Scientist, RIKEN
2006-2009: Senior Research Scientist, RIKEN
2010-2015: Associate Chief Scientist, RIKEN
2015-Present: Chief Scientist, RIKEN
2008-Present: Adjunct Professor, Dept. Electronic Chem., Tokyo Institute of Tech., Japan
2011-Present: Adjunct Professor, Div. of Materials Science, Saitama University, Japan
2017-Present: Adjunct Professor, Dept. Applied Chemistry, Kyusyu University, Japan
2018-Present: Adjunct Professor, College of Science, Univ. of the Philippines Diliman
2018-Present: Adjunct Professor, Dept. Chemistry, GIST, Korea
2019-Present: Adjunct Professor, Dept. Chemistry, Seoul National University, Korea

Awards and Honors

Sep. 2003: Publication Award (The Surface Science Society of Japan)
Mar. 2008: Young Scientist Award (The Physical Society of Japan)
Mar. 2009: Significant Achievement Award (S) (RIKEN)
Nov. 2009: Sir Martin Wood Prize (Millennium Science Forum)
Sep. 2016: International Academic Prize (Japan Society of Molecular Science)
Apr. 2018: Commendation for Science and Technology by the MEXT (MEXT)
Jul. 2018: Nanoprobe Prize (Japan Science and Technology Agency)
Mar. 2019: Academic Award, Chemical Society of Japan

Professional Organizations

Japanese Chemical Society, member since 1997
Japanese Physical Society, member since 1999
The Surface Science Society of Japan, member since 2001
The Japan Society of Applied Physics, member since 2001
Japan Society of Molecular Science, member since 2003
The Korean Scientists and Engineers Association in Japan, member since 2004
(2009- present, Vice President)
Chair of RIKEN Scientist's Assembly Steering Committee (FY 2013)
Member of RIKEN Science Council, since 2015-

List of Publication (Full)

1. Selective triplet exciton formation in a single molecule, Kensuke Kimura, Kuniyuki Miwa, Hiroshi Imada*, Miyabi Imai-Imada, Shota Kawahara, Jun Takeya, Maki Kawai, Michael Galperin*, Yousoo Kim*, **Nature** 570 (2019) 210-213.
2. On-surface evolution of meso-isomerism in two-dimensional supramolecular assemblies, Juyeon Park (§), Ju-Hyung Kim* (§), Sunmi Bak, Kazukuni Tahara, Jaehoon Jung*, Maki Kawai, Yoshito Tobe*, and Yousoo Kim*, **Angew. Chem. Int. Ed.** 58 (2019) 9611-9618.
3. In-situ spectroscopic study on the surface hydroxylation of diamond electrodes, Seiji Kasahara, Taiga Ogose, Norihito Ikemiya, Takashi Yamamoto, Keisuke Natsui, Yasuyuki Yokota, Raymond A. Wong, Shota Iizuka, Nagahiro Hoshi, Yoshitaka Tateyama, Yousoo Kim, Masashi Nakamura, Yasuaki Einaga*, **Anal. Chem.** 91 (2019) 4980-4986.
4. Many-body states description of single-molecule electroluminescence driven by scanning tunneling microscope, Kuniyuki Miwa, Hiroshi Imada, Miyabi Imai-Imada, Kensuke Kimura, Michael Galperin* and Yousoo Kim*, **Nano Lett.** 19 (2019) 2803-2811.
5. Dimensionality control of self-assembled azobenzene derivatives on a gold surface, Hyo Won Kim*, Jaehoon Jung, Mina Han, JiYeon Ku, Young Kuk, and Yousoo Kim*, **J. Phys. Chem. C** 123 (2019) 8859-8864.
6. Organic molecular tuning of many-body interaction energies in air-suspended carbon nanotubes, Shunsuke Tanaka, Keigo Otsuka, Kensuke Kimura, Akihiro Ishii, Hiroshi Imada, Yousoo Kim and Yuichiro K. Kato*, **J. Phys. Chem. C** 123 (2019) 5776-5781.
7. Ultrafast vibrational dynamics of CO ligands on RuTPP/Cu(110) under photodesorption conditions, Takuma Omiya, Yousoo Kim, Rasmita Raval and Heike Arnolds*, **Surfaces** 2 (2019) 117-130.
8. Systematic assessment of benzenethiol self-assembled monolayers on Au(111) as a standard sample for electrochemical tip-enhanced Raman spectroscopy, Yasuyuki Yokota, Norihiko Hayazawa, Bo Yang, Emiko Kazuma, Francesca Celine Inserto Catalan and Yousoo Kim*, **J. Phys. Chem. C** 123 (2019) 2953-2963.
9. Mechanistic studies of plasmon chemistry on metal catalysts, Emiko Kazuma and Yousoo Kim*, **Angew. Chem. Int. Ed.** 58 (2019) 4800-4808.
10. Energy-level alignment of a single molecule on ultrathin insulating film, Miyabi Imai-Imada, Hiroshi Imada, Kuniyuki Miwa, Jaehoon Jung, Tomoko K Shimizu, Maki Kawai, Yousoo Kim*, **Phys. Rev. B** 98 (2018) 201403(R), 1-6.

11. Real-space investigation of energy transfer with single-molecule luminescence and absorption spectroscopy, Hiroshi Imada and Yousoo Kim*, **AAPPS Bulletin** 28 (2018) 3-8.

12. STM studies of photochemistry and plasmon chemistry on metal surfaces, Emiko Kazuma, Jaehoon Jung, Hiromu Ueba, Michael Trenary, Yousoo Kim*, accepted to be published in **Prog. Surf. Sci.** 93 (2018) 146-162.

13. Discerning the redox-dependent electronic and interfacial structures in electroactive self-assembled monolayers, Raymond A Wong, Yasuyuki Yokota, Mitsuru Wakisaka, Junji Inukai, Yousoo Kim*, **J. Am. Chem. Soc.** 140 (2018) 13672-13679

14. Fabrication of sharp gold tips by three-electrode electrochemical etching with high controllability and reproducibility, Bo Yang, Emiko Kazuma, Yasuyuki Yokota, Yousoo Kim*, **J. Phys. Chem. C** 122 (2018) 16950-16955.

15. Intense THz emission in high quality MBE-grown GaAs film with thin n-doped buffer, Sheryl Ann B. Vizcara, Lorenzo P. Lopez, John Daniel E. Vasquez, Maria Herminia M. Balgos, Daisuke Hashizume, Norihiko Hayazawa, Yousoo Kim, Masahiko Tani, Armando S. Somintac, Arnel A. Salvador, Elmer S. Estacio, **Opt. Mater. Express** 8 (2018) 1463-1471.

16. Real-space and real-time observation of a plasmon-induced chemical reaction of a single molecule, Emiko Kazuma, Jaehoon Jung, Hiromu Ueba, Michael Trenary, Yousoo Kim*, **Science** 360 (2018) 521-526.

17. Sulfur Atoms Adsorbed on Cu(100) at Low Coverage: Characterization and Stability against Complexation, Holly Walen, Da-Jiang Liu, Junepyo Oh, Hyun Jin Yang, Peter M. Spurgeon, Yousoo Kim, Patricia A. Thiel*, **J. Phys. Chem. B** 122 (2018) 963-971.

18. Evolution of Graphene Growth on Pt(111): From Carbon Clusters to Nanoislands, Hyo Won Kim*, Wonhee Ko, JiYeon Ku, Yousoo Kim, Seongjun Park, Sungwoo Hwang, **J. Phys. Chem. C** 121 (2017) 25074-25078.

19. Facet-Dependent Temporal and Spatial Changes in Boron-Doped Diamond Film Electrodes due to Anodic Corrosion, Francesca Celine Catalan, Norihiko Hayazawa, Yasuyuki Yokota, Raymond Wong, Takeshi Watanabe, Yasuaki Einaga, Yousoo Kim*, **J. Phys. Chem. C** 121 (2017) 26742-26750.

20. Surface Hydrogenation of Boron-Doped Diamond Electrodes by Ca-thodic Reduction, Seiji Kasahara, Keisuke Natsui, Takeshi Watanabe, Yasuyuki Yokota, Yousoo Kim, Shota Iizuka, Yoshitaka Tateyama, Yasuaki Einaga, **Anal. Chem.** 89 (2017) 11342-11347.

21. Long-distance excitation of nitrogen-vacancy centers in diamond via surface spin waves, Daisuke Kikuchi, Dwi Prananto, Kunitaka Hayashi, Abdelghani Laraoui, Norikazu Mizuochi, Mutsuko

Hatano, Eiji Saitoh, Yousoo Kim, Carlos A. Meriles, Toshu An*, **Appl. Phys. Express** 10 (2017) 103004.

22. Nanoscale Dehydrogenation Observed by Tip-Enhanced Raman Spectroscopy, Songpol Chaunchaiyakul, Agung Setiadi, Pawel Krukowski, Francesca Celine Catalan, Megumi Akai-Kasaya, Akira Saito, Norihiko Hayazawa, Yousoo Kim, Hideji Osuga and Yuji Kuwahara*, **J. Phys. Chem. C** 121 (2017) 18162-18168.
23. Rapid photochemical synthesis of sea-urchin-shaped hierarchical porous COF-5 and its lithography-free patterned growth, Soyoung Kim, Chibeom Park, Minkyung Lee, Intek Song, Jungah Kim, Minhui Lee, Jaehoon Jung, Yousoo Kim, Hyunseob Lim*, Hee Cheul Choi*, **Adv. Funct. Mater.** 27 (2017) 1700925.
24. Single molecule investigation of energy dynamics in a coupled plasmon-exciton system, Hiroshi Imada, Kuniyuki Miwa, Miyabi Imai-Imada, Shota Kawahara, Kensuke Kimura and Yousoo Kim*, **Phys. Rev. Lett.** 119 (2017) 013901, 1-6.
25. Desorption of CO from individual ruthenium porphyrin molecules on a copper surface by inelastic tunnelling process, Takuma Omiya, Paolo Poli, Heike Arnolds, Rasmita Raval, Mats Persson and Yousoo Kim*, **Chem. Comm.** 53 (2017) 6148-6151.
26. A direct pathway to molecular photodissociation on metal surfaces using visible light, Emiko Kazuma, Jaehoon Jung, Hiromu Ueba, Michael Trenary, Yousoo Kim*, **J. Am. Chem. Soc.** 139 (2017) 3115-3121.
27. Chemically induced topological zero mode at graphenic armchair edges, Maxim Ziatdinov, Hyunseob Lim, Shintaro Fujii, Koichi Kusakabe, Manabu Kiguchi, Toshiaki Enoki and Yousoo Kim*, **Phys. Chem. Chem. Phys.** 19 (2017) 5145-5154.
28. A new analytical method for extracting precise structural parameters of epitaxial graphene from Moiré patterns, Hyunseob Lim, Hyun Jin Yang and Yousoo Kim*, **Adv. Mater. Interfaces** 3 (2016) 1600826.
29. Real-space investigation of energy transfer in heterogeneous molecular dimers, Hiroshi Imada, Kuniyuki Miwa, Miyabi Imai-Imada, Shota Kawahara, Kensuke Kimura and Yousoo Kim*, **Nature** 538 (2016) 364-367.
30. Single-molecule dynamics in the presence of strong intermolecular interactions, Hyun Jin Yang, Michael Trenary, Maki Kawai and Yousoo Kim*, **J. Phys. Chem. Lett.** 7 (2016) 4369-4373.
31. Formation of two-dimensional copper selenide on Cu(111) at very low selenium coverages, Holly Walen, Da-Jiang Liu, Junepyo Oh, Hyun Jin Yang, Yousoo Kim, Patricia A. Thiel*, **Chem. Phys. Chem.** 17 (2016) 2137-2145.

32. Effects of molecule-insulator interaction on geometric property of a single phthalocyanine molecule adsorbed on an ultrathin NaCl film, Kuniyuki Miwa, Hiroshi Imada, Shota Kawahara, and Yousoo Kim*, **Phys. Rev. B**, 93 (2016) 165419, 1-9.

33. Direct visualization of surface phase of oxygen molecules physisorbed on Ag(111) surface: A two-dimensional quantum spin system, Shunji Yamamoto, Yasuo Yoshida*, Hiroshi Imada, Yousoo Kim, and Yukio Hasegawa, **Phys. Rev. B**, 93 (2016) 081408 (R), 1-5.

34. Identification of Au-S complexes on Au(100), Holly Walen, Da-Jiang Liu, Junepyo Oh, Hyun Jin Yang, Yousoo Kim, and P. A. Thiel*, **Phys. Chem. Chem. Phys.** 18 (2016) 4891-4901.

35. Seamless growth of a supramolecular carpet, Ju-Hyung Kim, Jaehoon Jung*, Yu Seok Yang, Jean-Charles Ribierre, Chihaya Adachi, Maki Kawai, Takanori Fukushima*, and Yousoo Kim*, **Nature Commun.** 7 (2016) 10653, 1-9.

36. Lateral hopping of CO on Ag(110) by multiple overtone excitation, Junepyo Oh, Hyunseob Lim, Ryuichi Arafune, Jaehoon Jung, Maki Kawai, and Yousoo Kim*, **Phys. Rev. Lett.** 116 (2016) 056101, 1-5.

37. Electron confinement in graphene nanoislands with free-electron-like energy dispersion, Hyo Won Kim, Seiji Takemoto, Emi Minamitani, Tomonari Okada, Takeshi Takami, Kenta Motobayashi, Michael Trenary, Maki Kawai, Nobuhiko Kobayashi, and Yousoo Kim*, **J. Phys. Chem. C** 120 (2016) 345-349.

38. The role of thermal excitation in the tunneling-electron-induced reaction: Dissociation of dimethyl disulfide on Cu(111), Kenta Motobayashi, Yousoo Kim, Michiaki Ohara, Hiromu Ueba, and Maki Kawai*, **Surf. Sci.** 643 (2016) 18-22.

39. Template-free synthesis of a molecular Solomon link via two-component self-assembly, Young Ho Song, Nem Singh, Jaehoon Jung, Hyunuk Kim, Eun-Hee Kim, Hae-Kap Cheong, Yousoo Kim, and Ki-Whan Chi*, **Angew. Chem. Int. Ed.** 55 (2016) 2007-2011.

40. Structurally Driven One-dimensional Electron Confinement in Sub-5-nm Graphene Nanowrinkles, Hyunseob Lim, Jaehoon Jung*, Rodney S. Ruoff, and Yousoo Kim*, **Nature Commun.** 6 (2015) 8601, 1-6.

41. Elucidation of isomerization pathways of a single azobenzene derivative using an STM, Emiko Kazuma, Mina Han, Jaehoon Jung, Junepyo Oh, Takahiro Seki, and Yousoo Kim*, **J. Phys. Chem. Lett.** 6 (2015) 4239-4243.

42. Long-range displacive reconstruction of Au(110) triggered by low coverage of sulfur, Holly Walen, Da-Jiang Liu, Junepyo Oh, Hyun Jin Yang, Yousoo Kim and P. A. Thiel*, **J. Phys. Chem. C** 119 (2015) 21000-21010.

43. Spatially extended underscreened Kondo state from collective molecular spin, Emi Minamitani, Ying-Shuang Fu, Qi-Kun Xue, Yousoo Kim, and Satoshi Watanabe*, **Phys. Rev. B** 92 (2015) 075144, 1-5.

44. Atomic-scale luminescence measurement and theoretical analysis unveiling electron energy dissipation at a p-type GaAs(110) surface, Hiroshi Imada, Kuniyuki Miwa, Jaehoon Jung, Tomoko K Shimizu, Naoki Yamamoto, and Yousoo Kim*, **Nanotechnology** 26 (2015) 365402. [Highlighted as Nanotechnology Select]

45. Nonequilibrium Green's function theory of scanning tunneling microscope-induced light emission from molecule covered metal surfaces: effects of coupling between exciton and plasmon modes, Kuniyuki Miwa, Hiroshi Imada, Mamoru Sakaue, Hideaki Kasai, and Yousoo Kim*, **e-J. Surf. Sci. Nanotech.** 13 (2015) 385-390.

46. Atomic-scale dynamics of surface-catalyzed hydrogenation/dehydrogenation: NH on Pt(111), Zhu Liang, Hyun Jin Yang, Junepyo Oh, Jaehoon Jung, Yousoo Kim*, and Michael Trenary*, **ACS Nano** 9 (2015) 8303-8311.

47. Tunneling desorption of atomic hydrogen on the surface of titanium dioxide, Taketoshi Minato, Seiji Kajita, Chi-Lun Pang, Naoki Asao, Yoshinori Yamamoto, Takashi Nakayama, Maki Kawai, and Yousoo Kim*, **ACS Nano** 9 (2015) 6837-6842.

48. Self-organization of S adatoms on Au(111): √3R30° rows at low coverage, Holly Walen, Da-Jiang Liu, Junepyo Oh, Hyunseob Lim, J. W. Evans, Yousoo Kim and P. A. Thiel*, **J. Chem. Phys.** 143 (2015) 014704.

49. Reconstruction of steps on the Cu(111) surface induced by sulfur, Holly Walen, Da-Jiang Liu, Junepyo Oh, Hyunseob Lim, J. W. Evans, Yousoo Kim and P. A. Thiel*, **J. Chem. Phys.** 142 (2015) 053111, 1-14.

50. Action spectroscopy for single-molecule reactions – experiments and theory, Yousoo Kim, Kenta Motobayashi, Thomas Frederiksen, Hiromu Ueba, and Maki Kawai, **Prog. Surf. Sci.** 90 (2015) 85-143.

51. Electronic modulations in a single wall carbon nanotube induced by the Au(111) surface reconstruction, Sylvain Clair, Hyung-Joon Shin, Yousoo Kim*, and Maki Kawai*, **Appl. Phys. Lett.** 106 (2015) 053111, 1-4.

52. Cu2S3 complex on Cu(111) as a dandidate for mass transport enhancement, Holly Walen, Da-Jiang Liu, Junepyo Oh, Hyunseob Lim, James W. Evans, Christine Aikens, Yousoo Kim, and Patricia A. Thiel*, **Phys. Rev. B** 91 (2015) 045426, 1-7.

53. Adsorption of water dimer on platinum(111): identification of the -OH···Pt hydrogen bond, Kenta

Motobayashi, Líney Árnadóttir, Chikako Matsumoto, Eric M. Stuve, Hannes Jónsson, Yousoo Kim, and Maki Kawai*, **ACS Nano** 8 (2014) 11583-11590.

54. Supramolecular assembly via interactions between molecular dipoles and alkali metal ions, T. K. Shimizu, J. Jung, H. Imada, and Yousoo Kim*, **Angew. Chem. Int. Ed.** 126 (2014) 13949-13953.

55. Controlling orbital-selective Kondo effects in a single molecule through coordination chemistry, Noriyuki Tsukahara, Emi Minamitani, Yousoo Kim, Maki Kawai, and Noriaki Takagi*, **J. Chem. Phys.** 141 (2014) 054702, 1-9.

56. A search for the structure of a sulfur-induced reconstruction on Cu(111), Da-Jiang Liu, Holly Walen, Junepyo Oh, Hyunseob Lim, James W. Evans, Yousoo Kim, and Patricia A. Thiel*, **J. Phys. Chem. C** 118 (2014) 29218-29223.

57. Controlling dissociation reaction of a water molecule on ultrathin MgO film, Jaehoon Jung, Hyung-Joon Shin, Maki Kawai, and Yousoo Kim*, **J. Surf. Sci. Soc. Jpn.** 35 (2014) 486-491.

58. Surface hydrogenation reactions at the single-molecule level, Satoshi Katano, Yousoo Kim, Maki Kawai, and Michael Trenary*, **Chem. Rec.** 14 (2014) 819-826.

59. Site-dependent electronic structures of a single molecule on a metal surface studied by scanning tunneling microscopy and spectroscopy, Satoshi Katano, Masafumi Hori, Yousoo Kim, and Maki Kawai, **Chem. Phys. Lett.** 614 (2014) 117-122.

60. Thermally activated polymorphic transition from 1D ribbon to 2D carpet: squaric acid on Au(111), Kan Ueji (§), Jaehoon Jung (§), Junepyo Oh, Kazuo Miyamura, and Yousoo Kim*, **Chem. Commun.** 50 (2014) 11230-11233. [(§) These authors contributed equally to this work.]

61. Functionalization of graphene grown on metal substrate with atomic oxygen: enolate vs epoxide, Jaehoon Jung, Hyunseob Lim, Junepyo Oh, and Yousoo Kim*, **J. Am. Chem. Soc.** 136 (2014) 8528-8531.

62. Dissociation pathways of a single dimethyl disulfide on Cu(111): reaction induced by simultaneous excitation of two vibrational modes, Kenta Motobayashi, Yousoo Kim, Ryuichi Arafune, Michiaki Ohara, Hiromu Ueba, and Maki Kawai*, **J. Chem. Phys.** 140 (2014) 194705, 1-8.

63. Surface morphology of atomic nitrogen on Pt(111), Zhu Liang, Hyun Jin Yang, Yousoo Kim*, and Michael Trenary*, **J. Chem. Phys.** 140 (2014) 114707, 1-6.

64. Direct observation of adsorption geometry for the van der Waals adsorption of a single π-conjugated hydrocarbon molecule on Au(111), Ju-Hyung Kim, Jaehoon Jung, Kazukuni Tahara, Yoshito Tobe, Yousoo Kim*, and Maki Kawai*, **J. Chem. Phys.** 140 (2014) 074709, 1-5. [Cover Article]

65. Lattice-contraction-induced Moiré patterns in direction-controlled epitaxial graphene on Cu(111), Hyunseob Lim, Jaehoon Jung, Hyun Jin Yang, and Yousoo Kim*, **Adv. Mater. Interfaces** 1 (2014) 1300080, 1-5.

66. Mode-selective electron-phonon coupling in laser photoemission on Cu(110), Emi Minamitani, Ryuichi Arafune, Mayuko Q. Yamamoto, Noriaki Takagi, Maki Kawai, and Yousoo Kim*, **Phys. Rev. B, 88** (2013) 224301, 1-7.

67. Comprehensive macroscopic investigation on hexagonal C14 Laves-type Ru-based superconductors ARu2 (A = Lu, Y, Sc) with effective electron correlation, Seiji Niitaka*, Emi Minamitani, Yousoo Kim, Hidenori Takagi, and Kimitoshi Kono, **J. Phys. Soc. Jpn. 82** (2013) 124703, 1-10.

68. Molecular assembly through the chain reaction of substituted acenes on the Si(100)-(2×1)-H surface, Md. Zakir Hossain, Hiroyuki S. Kato, Jaehoon Jung, Yousoo Kim, and Maki Kawai*, **J. Phys. Chem. C 117** (2013) 19436-19441.

69. Impact of lithium-ion ordering on surface electronic states of LixCoO2, Katsuya Iwaya, Takafumi Ogawa, Taketoshi Minato, Kiyotaka Miyoshi, Jun Takeuchi, Akihide Kuwabara, Hiroki Moriwake, Yousoo Kim, and Taro Hitosugi*, **Phys. Rev. Lett. 111** (2013) 126104, 1-5.

70. Selective aerobic oxidation of methanol in the coexistence of amines by nanoporous gold catalysts: Highly efficient synthesis of formamides, Shinya Tanaka, Taketoshi Minato, Eisuke Ito, Masahiko Hara, Yousoo Kim, Yoshinori Yamamoto, and Naoki Asao*, **Chem. Eur. J. 19 (2013)** 11832-11836. [Frontspecies Cover Article]

71. Adsorption-induced stability reversal of photochromic diarylethene on metal surfaces, Tomoko K. Shimizu, Jaehoon Jung, Hiroshi Imada, and Yousoo Kim*, **Chem. Commun. 49 (2013)** 8710-8712..

72. Molecular oxygen network as a template for adsorption of ammonia on Pt(111), Zhu Liang, Hyo Won Kim, Yousoo Kim*, and Michael Trenary*, **J. Phys. Chem. Lett. 4 (2013)** 2900-2905.

73. STM investigation of CO ordering on Pt(111): from an isolated molecule to high-coverage superstructure, Hyun Jin Yang, Taketoshi Minato, Maki Kawai, and Yousoo Kim*, **J. Phys. Chem. C 117 (2013)** 16429-16437.

74. Tailoring electronic states of a single molecule using adamantane-based molecular tripods, Satoshi Katano, Yousoo Kim, Toshikazu Kitagawa, and Maki Kawai*, **Phys. Chem. Chem. Phys. 15 (2013)** 14229-14233.

75. Photoresponse on the desorption of an atomic hydrogen on titanium dioxide surface induced by a tip of scanning tunneling microscope, Taketoshi Minato, Naoki Asao, Yoshinori Yamamoto,

Maki Kawai, and Yousoo Kim*, **Chem. Lett. 42 (2013)** 942-943.

76. Orbital-selective single molecule reactions on a metal surface studied by low-temperature scanning tunneling microscopy, Satoshi Katano, Yousoo Kim, Michael Trenary, and Maki Kawai*, **Chem. Commun. 49 (2013)** 4679.

77. Dispersive electronic states of the π-orbitals stacking in single molecular lines on the Si(001)-(2×1)-H surface, Shin-ichi Kamakura, Jaehoon Jung, Taketoshi Minato, Yousoo Kim, Md. Zakir Hossain, Hiroyuki S. Kato, Toshiaki Munakata, and Maki Kawai*, **J. Phys. Chem. Lett. 4 (2013)** 1199.

78. Substrate-induced symmetry breaking in silicene, Chun-Liang Lin, Ryuichi Arafune, Kazuaki Kawahara, Mao Kanno, Noriyuki Tsukahara, Emi Minamitani, Yousoo Kim, Maki Kawai, and Noriaki Takagi*, **Phys. Rev. Lett. 110 (2013)** 076801.

79. Structure, formation, and equilibration of ensembles of Ag-S complexes on an Ag surface, Selena Russell, Yousoo Kim, Da-Jiang Liu, James Evans, and Patricia A. Thiel*, **J. Chem. Phys. 183 (2013)** 071101. [Cover Article].

80. Spectral fitting of action spectra for motions and reactions of single molecules on metal surfaces, Kenta Motobayashi, Satoshi Katano, Yousoo Kim, and Maki Kawai*, **Bull. Chem. Soc. Jpn. 86 (2013)** 75-79.

81. Structural transition of silicene on Ag(111), Ryuichi Arafune, Chun-Liang Lin, Kazuyuki Kawahara, Noriyuki Tsukahara, Emi Minamitani, Yousoo Kim, Noriaki Takagi, and Maki Kawai*, **Surf. Sci. 608 (2013)** 297-300.

82. Combined scanning tunneling microscopy and high-resolution electron energy loss spectroscopy study on the adsorption state of CO on Ag(001), Ryuichi Arafune, Hyung-Joon Shin, Jaehoon Jung, Emi Minamitani, Noriaki Takagi, Yousoo Kim, and Maki Kawai*, **Langmuir 28 (2012)** 13249-13252.

83. Identification at the single molecule level of C2Hx moieties derived from acetylene on the Pt(111) surface, Tomonari Okada, Yousoo Kim, Michael Trenary, and Maki Kawai*, **J. Phys. Chem. C 116 (2012)** 18372–18381.

84. Ordering of molecules with π-conjugated triangular core by switching hydrogen bonding and van der Waals interactions, Ju-Hyung Kim, Kazukuni Tahara, Jaehoon Jung, Steven De Feyter, Yoshito Tobe*, Yousoo Kim*, and Maki Kawai*, **J. Phys. Chem. C 116 (2012)** 17082-17088.

85. Symmetry-driven novel Kondo effect in a molecule, Emi Minamitani, Noriyuki Tsukahara, Daisuke Matsunaka, Yousoo Kim, Noriaki Takagi, and Maki Kawai*, **Phys. Rev. Lett. 109 (2012)** 086602, 1-5.

86. Ligand field effect at oxide-metal interface on the chemical reactivity of ultrathin oxide film surface, Jaehoon Jung, Hyung-Joon Shin, Yousoo Kim*, and Maki Kawai*, **J. Am. Chem. Soc. 134 (2012)** 10554–10561.

87. Creation of single oxygen vacancy on titanium dioxide surface, Taketoshi Minato, Maki Kawai, and Yousoo Kim*, **J. Mater. Res. 27 (2012)** 2237-2240.

88. Structure of silicene grown on Ag(111), Chun-Liang Lin, Ryuichi Arafune, Kazuaki Kawahara, Noriyuki Tsukahara, Emi Minamitani, Yousoo Kim, Noriaki Takagi, and Maki Kawai*, **Appl. Phys. Express 5 (2012)** 045802.

89. Density functional theory calculation for magnetism of Fe-Phthalocyanine molecules on Au(111), Emi Minamitani, Daisuke Matsunaka, Noriyuki Tsukahara, Noriaki Takagi, Maki Kawai, and Yousoo Kim*, **e-J. Surf. Sci. Nanotech., 10 (2012)** 38-44.

90. Two dimensional superstructure formation of fluorinated fullerene on Au(111): A scanning tunneling microscopy study, Tomoko K. Shimizu (§), Jaehoon Jung (§), Tetsuya Otani, Young-Kyu Han, Maki Kawai, and Yousoo Kim*, **ACS Nano, 6 (2012)** 2679-2685. [(§) equally contributing authors]

91. Aerobic oxidation of alcohols in the liquid phase with nanoporous gold catalysts, Naoki Asao*, Naoya Hatakeyama, Menggenbateer, Taketoshi Minato, Eisuke Ito, Masahiko Hara, Yousoo Kim, Yoshinori Yamamoto, Mingwei Chen, Wei Zhang, and Akihisa Inoue, **Chem. Commun. 48 (2012)** 4540-4542.

92. Step-edge faceting and local metallization of a single-wall semiconducting carbon nanotube, Sylvain Clair, Yousoo Kim*, and Maki Kawai*, **J. Appl. Phys. 110 (2011)** 073710, 1-4.

93. Coexistence and interconversion of di-σ and π-bonded ethylene on the Pt(111) and Pd(110) surfaces, Tomonari Okada, Yousoo Kim, Yasuyuki Sainoo, Tadahiro Komeda, Michael Trenary, and Maki Kawai*, **J. Phys. Chem. Lett. 2 (2011)** 2263-2266.

94. One-dimensional molecular zippers, Hyo Won Kim, Jaehoon Jung, Mina Han, Seongjoon Lim, Kaoru Tamada, Masahiko Hara, Maki Kawai, Yousoo Kim, and Young Kuk*, **J. Am. Chem. Soc. 133 (2011)** 9236-9238.

95. Energy level alignment of single-wall carbon nanotubes on metal surfaces, Sylvain Clair, Yousoo Kim*, and Maki Kawai*, **Phys. Rev. B 83 (2011)** 245422, 1-5. [Selected for Vir. J. Nan. Sci. & Tech.]

96. Activation of ultrathin oxide films for chemical reaction by interface defects, Jaehoon Jung, Hyung-Joon Shin, Yousoo Kim*, and Maki Kawai*, **J. Am. Chem. Soc. 133 (2011)** 6142-6145.

97. Control of molecular rotors by selection of anchoring sites, Hyo Won Kim, Mina Han, Hyung-

Joon Shin, Seongjoon Lim, Youngtek Oh, Kaoru Tamada, Masahiko Hara, Yousoo Kim, Maki Kawai, and Young Kuk*, **Phys. Rev. Lett. 106 (2011)** 146101, 1-4. [Cover Article]

98. Coverage-dependent formation of chiral ethylthiolate-Au complexes on Au(111), Sylvain Clair, Yousoo Kim and Maki Kawai*, **Langmuir 27 (2011)** 627-629.

99. Low-temperature adsorption of H2S on Ag(111), Selena M. Russell, Da-Jiang Liu, Maki Kawai, Yousoo Kim, and Patricia A. Thiel*, **J. Chem. Phys. 133 (2010)** 124705, 1-8.

100. Insights into action spectroscopy for single molecule motion and reactions through inelastic electron tunneling, Kenta Motobayashi, Yousoo Kim, Hiromu Ueba, and Maki Kawai*, **Phys. Rev. Lett. 105 (2010)** 076101, 1-4.

101. Controlling water dissociation on an ultrathin MgO film by tuning film thickness, Jaehoon Jung, Hyung-Joon Shin, Yousoo Kim*, and Maki Kawai*, **Phys. Rev. B 82 (2010)** 085413, 1-6. [Selected for Vir. J. Nan. Sci. & Tech.]

102. Termination and Verwey transition of the magnetite (111) surface studied by scanning tunneling microscopy and first principle calculations, Tomoko K. Shimizu, Jaehoon Jung, Hiroyuki S. Kato, Yousoo Kim*, and Maki Kawai*, **Phys. Rev. B 81 (2010)** 235429, 1-6.

103. Scanning tunneling microscopy and inelastic electron tunneling spectroscopy studies of methyl isocyanide adsorbed on Pt(111), Satoshi Katano, Yousoo Kim, Masafumi Hori, Michael Trenary, and Maki Kawai*, **J. Phys.; Conf. Ser. 235 (2010)** 012003, 1-7.

104. Upright structuring of functional carboxylate anchored on benzoate/Cu(110) molecular template studied by scanning tunneling microscopy, Satoshi Katano, Masafumi Hori, Caroline Rabot, Yousoo Kim, and Maki Kawai*, **Chem. Lett. 39 (2010)** 554-555.

105. State-selective dissociation of a single water molecule on an ultrathin MgO film, Hyung-Joon Shin, Jaehoon Jung, Kenta Motobayashi, Susumu Yanagisawa, Yoshitada Morikawa, Yousoo Kim*, and Maki Kawai*, **Nature Materials 9 (2010)** 442-447.

106. Giant electric double-layer capacitance of heavily boron-doped diamond electrode, Takeshi Watanabe, Tomoko K. Shimizu, Yoshitaka Tateyama, Yousoo Kim, Maki Kawai, and Yasuaki Einaga*, **Diamond Relat. Mater. 19 (2010)** 772-777.

107. Single-Molecule Vibrational Spectroscopy and Inelastic-Tunneling-Electron-Induced Diffusion of Formate Adsorbed on Ni(110), Satoshi Katano, Yousoo Kim, Yuma Kagata, and Maki Kawai*, **J. Phys. Chem. C 114 (2010)** 3003-3007.

108. Vibration-Assisted Rotation and Deprotonation of a Single Formic Acid Molecule Adsorbed on Ni(110) Studied by Scanning Tunneling Microscopy, Satoshi Katano, Yousoo Kim, Yuma Kagata and Maki Kawai*, **J. Phys. Chem. C 113 (2009)** 19277-19280.

109. Substrate-induced array of quantum dots in a single-walled carbon nanotube, Hyung-Joon Shin, Sylvain Clair, Yousoo Kim*, and Maki Kawai*, **Nature Nanotech. 4 (2009)** 567-570.

110. Effect of substituent position on molecular assembly: Hydrogen-bonded arrangement of aminobenzoates adsorbed on Cu(110), S. Katano, M. Hori, C. Rabot, Y. Kim*, and Maki Kawai*, **Jpn. J. Appl. Phys. 48 (2009)** 08JB16, 1-5. [Selected for Vir. J. Nan. Sci. & Tech.]

111. Self-assembly of meta-aminobenzoate on Cu(110), C. Rabot, M. Hori, S. Katano, Y. Kim* and Maki Kawai*, **Langmuir 25 (2009)** 5504-5508.

112. The Electronic Structure of Oxygen Atom Vacancy and Hydroxyl Impurity Defects on Titanium Dioxide (110) Surface, Taketoshi Minato, Yasuyuki Sainoo, Yousoo Kim, Hiroyuki S. Kato, Ken-ichi Aika, Maki Kawai*, Jin Zhao, Hrvoje Petek*, Tian Huang, Wei He, Bing Wang, Zhuo Wang, Yan Zhao, Jinlong Yang*, and J.G. Hou*, **J. Chem. Phys. 130 (2009)** 124502, 1-11.

113. Electronic structure of single-walled carbon nanotubes on ultrathin insulating films, Hyung-Joon Shin, Sylvain Clair, Yousoo Kim*, and Maki Kawai*, **Appl. Phys. Lett. 93 (2008)** 233104, 1-3. [Selected for Vir. J. Nan. Sci. & Tech.]

114. Electric field response of a vibrationally excited molecule in an STM junction, Michiaki Ohara, Yousoo Kim*, and Maki Kawai*, **Phys. Rev. B 78 (2008)** 201405, 1-4.

115. Effect of the Substituent on Metal-Molecule Hybridization, Masafumi Hori, Satoshi Katano, Yousoo Kim* and Maki Kawai*, **Surf. Sci. 602 (2008)** 3140-3143.

116. Vibrational study of water dimers on Pt(111) using a scanning tunneling microscope, Kenta Motobayashi, Chikako Matsumoto, Yousoo Kim* and Maki Kawai*, **Surf. Sci. 602 (2008)** 3136-3139.

117. Surface diffusion and interaction of metastable formate on Ni(110) investigated by low-temperature scanning tunneling microscopy, Satoshi Katano, Yousoo Kim, Yuma Kagata and Maki Kawai*, **Chem. Lett. 37 (2008)** 914-915.

118. Self-assembly and scanning tunneling microscopy tip-induced motion of ferrocene adamantane trithiolate adsorbed on Au(111), Satoshi Katano, Yousoo Kim*, Toshikazu Kitagawa, and Maki Kawai*, **Jpn. J. Appl. Phys. 47 (2008)** 6156-6159.

119. Role of molecular orbitals near the Fermi level in the excitation of vibrational modes of a single molecule at the STM junction, Michiaki Ohara, Yousoo Kim, Susumu Yanagisawa, Yoshitada Morikawa and Maki Kawai, **Phys. Rev. Lett. 100 (2008)** 136104, 1-4 .

120. STM observations of co-adsorbed single-walled carbon nanotubes with benzoic acid molecules, C. Rabot, S. Clair, Y. Kim*, and Maki Kawai*, **Jpn. J. Appl. Phys. 46 (2007)** 5572-76. [Selected for Vir. J. Nan. Sci. & Tech.]

121. Reversible control of hydrogenation of a single molecule, S. Katano, Y. Kim*, M. Hori, M. Trenary, and Maki Kawai*, **Science 316 (2007)** 1883-1886.

122. Adsorption mechanism of alighned single wall carbon nanotubes at well defined metal surfaces, S. Clair, C. Rabot, Y. Kim*, and Maki Kawai*, **J. Vac. Sci. Tech. B 25 (2007)** 1143-1146. [Selected for Vir. J. Nan. Sci. & Tech.]

123. Hierarchical Chiral Framework Based on a Rigid Adamantane Tripod on Au(111), S. Katano, Y. Kim*, H. Matsubara, T. Kitagawa and M. Kawai*, **J. Am. Chem. Soc. 129 (2007)** 2511-2515.

124. Single Molecule Observations of the Adsorption Sites of Methyl Isocyanide on Pt(111) by Low-Temperature Scanning Tunneling Microscopy, Satoshi Katano, Eldad Herceg, Michael Trenary, Yousoo Kim, and Maki Kawai*, **J. Phys. Chem. B. 110 (2006)** 20344 -20349.

125. Local structure and assembly of formate adsorbed on Ni(110): Low temperature scanning tunneling microscopy study, Satoshi Katano, Yousoo Kim, Yuma Kagata and Maki Kawai*, **Chem. Phys. Lett. 427 (2006)** 379-382.

126. Controlling the reaction and motion of a single molecule by vibrational excitation, Michiaki Ohara, Yousoo Kim* and Maki Kawai*, **Chem. Phys. Lett. 426 (2006)** 357-360.

127. Tunneling-Electron-Induced Hopping of Methylthiolate on Cu(111), Michiaki Ohara, Yousoo Kim* and Maki Kawai*, **Jpn. J. Appl. Phys. 45 (2006)** 2022-2025.

128. Excitation of Molecular Vibrational Modes with Inelastic Scanning Tunneling Microscopy Processes: Examination through Action Spectra of cis-2-Butene on Pd(110), Y. Sainoo, Y. Kim*, T. Okawa, T. Komeda, H. Shigekawa, and M. Kawai*, **Phys. Rev. Lett. 95 (2005)** 246102-1-246102-4. [Selected for Vir. J. Nan. Sci. & Tech.]

129. Direct Observation of Conformational Isomers of (CH3S)2 Molecules on Cu(111), Michiaki Ohara, Yousoo Kim and Maki Kawai*, **Jpn. J. Appl. Phys. 44 (2005)** 5390-5392.

130. Low-temperature STM investigation of acetylene on Pd(111), C. Matsumoto, Y. Kim, T. Okawa, Y. Sainoo and Maki Kawai*, **Surf. Sci. 587 (2005)** 19-24.

131. Scanning Tunneling Microscope Imaging of (CH3S)2 on Cu(111), Michiaki Ohara, Yousoo Kim and Maki Kawai*, **Langmuir 21 (2005)** 4779-4781.

132. Single-molecule reactions and spectroscopy via vibrational excitation, Maki Kawai*, Tadahiro Komeda, Yousoo Kim, Yasuyuki Sainoo and Satoshi Katano, **Phil. Trans. R. Soc. Lond. A 362 (2004)** 1163-1171.

133. Inelastic tunneling spectroscopy using scanning tunneling microscopy on trans-2-butene molecule: Spectroscopy and mapping of vibrational feature, Y. Sainoo, Y. Kim, T. Komeda, and Maki Kawai*, **J. Chem. Phys. 120 (2004)** 7249-7251.

134. Local chemical reaction of benzene on Cu(110) via STM-induced excitation, T. Komeda, Y. Kim, Y. Fujita, Y. Sainoo, and Maki Kawai*, **J. Chem. Phys.. 120 (2004)** 5347-5352.

135. Observation of cis-2-butene molecule on Pd(110) by cryogenic STM: site determination using tunneling-current-induced rotation, Yasuyuki Sainoo, Yousoo Kim, Tadahiro Komeda, Maki Kawai and Hidemi Shigekawa*, **Surf. Sci. 536 (2003)** L403-L407.

136. Geometrical characterization of pyrimidine base molecules adsorbed on Cu(110) surfaces: XPS and NEXAFS studies, M. Furukawa, H. Fujisawa, S. Katano, H. Ogasawara, Y. Kim, T. Komeda, A. Nilsson and Maki Kawai*, **Surf. Sci. 532-535 (2003)** 261-266.

137. Characteristic configuration of cis-2-butene molecule on Pd(110) determined by scanning tunneling microscopy, Yasuyuki Sainoo, Yousoo Kim, Hirokazu Fukidome, Tadahiro Komeda, Maki Kawai and Hidemi Shigekawa*, **Jpn. J. Appl. Phys. 41 (2002)** 4976-4979.

138. Lateral motion of adsorbate induced by vibrational mode excitation with inelastic tunneling electron, Tadahiro Komeda, Yousoo Kim and Maki Kawai*, **Surf. Sci. 502-503 (2002)** 12-17.

139. Scanning tunneling microscopy study of water molecules on Pd(110) at cryogenic temperature, Tadahiro Komeda, Hirokazu Fukidome, Yousoo Kim, Maki Kawai, Yasuyuki Sainoo and Hidemi Shigekawa*, **Jpn. J. Appl. Phys. 41 (2002)** 4932-4935.

140. Single-molecule surface reaction by tunneling electrons, Yoosoo Kim, T. Komeda and Maki Kawai*, **Surf. Sci. 502-503 (2002)** 7-11.

141. Single-molecule reaction and characterization by vibrational excitation, Yousoo Kim, Tadahiro Komeda and Maki Kawai*, **Phys. Rev. Lett. 89 (2002)** 126104-1-126104-4. [Selected for Vir. J. Nan. Sci. & Tech.]

142. Single-molecule imaging and repositioning of 1,3-butadiene adsorbed on Pd(110) surface, Yousoo Kim, Tadahiro Komeda and Maki Kawai*, **Jpn. J. Appl. Phys. 41 (2002)** 4924-4927.

143. Scanning tunneling microscopy and near edge X-ray adsorption fine structure studies of adsorption of trans-2-butene on Pd(110), Satoshi Katano, Yousoo Kim, Masashi Furukawa, Hirohito Ogasawara, Tadahiro Komeda, Hiroyuki S. Kato, Anders Nilsson, Maki Kawai and Kazunari Domen*, **Jpn. J. Appl. Phys. 41 (2002)** 4911-4915.

144. Lateral hopping of molecules induced by excitation of internal vibration mode, T. Komeda, Y. Kim, Maki Kawai*, B. N. J. Persson, and H. Ueba, **Science 295 (2002)** 2055-2058.

145. Scanning Tunneling Microscopy Observation of CO on Pd(110) at Cryogenic Temperature; Imaging Mechanism and Novel One-Dimensional Array Formation, Tadahiro Komeda, Yousoo Kim, and Maki Kawai*, **Jpn. J. Appl. Phys. 40 (2001)** 4403-4408.

146. Investigation of 1D chain formation of CO on Pd(110) by low temperature scanning

tunneling microscope, Yousoo Kim, Hiroyuki S. Kato, Tadahiro Komeda, and Maki Kawai*, **Surf. Sci. 482-485 (2001)** 60-65.

147. Photo-induced nano-patterns on the surface of C_{60} single crystals, L. Jiang, Yousoo Kim, T. Iyoda, J. Li, K. Kitazawa, A. Fujishima and K. Hashimoto*, **Adv. Mater. 11 (1999)** 649-651.

148. AFM study of surface phenomena based on C_{60} film growth, Yousoo Kim, L. Jiang, T. Iyoda, K. Hashimoto and A. Fujishima*, **Appl. Surf. Sci. 130-132 (1998)** 602-609.

149. AFM observation of surface reconstruction of C_{60} single crystals, Yousoo Kim, L. Jiang, T. Iyoda, J. Li, K. Kitazawa, K. Hashimoto and A. Fujishima*, **Appl. Phys. A 66 (1998)** S763-S766.

150. Two types of spiral growth of C_{60} films on KBr(001), Yousoo Kim, L. Jiang, T. Iyoda, K. Hashimoto and A. Fujishima*, **Appl. Phys. Lett. 71 (1997)** 3489-3491.

151. Molecularly resolved observation of surface reconstruction of C_{60} epitaxial films by atomic force microscopy, Yousoo Kim, L. Jiang, T. Iyoda, K. Hashimoto and A. Fujishima*, **Surf. Sci. 385 (1997)** L945-L951.

152. Electrochemical property of surface modificated polypyrrole film with heteropoly anions, K. Cho, S.D. Chung, K.-S. Ryu, Yousoo Kim, J.-H. Choy and H. Kim*, **Synthetic Metals 69 (1995)** 481-482.