

List of Publications (updated in July 2012)

Articles in refereed journals

- [1] “Lateral Distribution of Li Atoms at the Initial Stage of Adsorption on TiO₂(110) Surface”
H. Tatsumi, A. Sasahara, and M. Tomitori, *J. Phys. Chem. C* **2012**, *116* (25), 13688-13692.
- [2] “Kelvin Probe Force Microscopy Study of a Pt/TiO₂ Catalyst Model Placed in an Atmospheric Pressure of N₂ Environment”
R. Kokawa, M. Ohta, A. Sasahara, and H. Onishi, *Chemistry - An Asian Journal* **2012**, *7* (6), 1251–1255.
- [3] “Local interaction imaging by SiGe quantum dot probe”
Y. Jeong, M. Hirade, R. Kokawa, H. Yamada, K. Kobayashi, N. Oyabu, Toyoko Arai, A. Sasahara, and M. Tomitori, *Curr. Appl. Phys.* **2012**, *12* (2), 581-584.
- [4] “Atomic scale analysis of ultra thin SiO₂ films prepared on TiO₂(100) surfaces”
A. Sasahara, C. L. Pang, and M. Tomitori, *J. Phys. Chem. C* **2010**, *114*, (47) 20189-20194.
- [5] “Acetone Adsorption on Oxidized and Reduced TiO₂(110): A Scanning Tunneling Microscope Study”
M. Yasuo, A. Sasahara, and H. Onishi, *J. Phys. Chem. C* **2010**, *114*, (34) 14579-14582.
- [6] “Adsorption State of 4,4'-Diamino-p-terphenyl through an Amino Group Bound to Si(111)-7×7 Surface Examined by X-ray Photoelectron Spectroscopy and Scanning Tunneling Microscopy”
T. Nishimura, A. Itabashi, A. Sasahara, H. Murata, T. Arai, and M. Tomitori, *J. Phys. Chem. C* **2010**, *114*, (25) 11109-11114.
- [7] “Surface Science Approach to Photochemistry of TiO₂”
A. Sasahara and H. Onishi, *Solid State Phenom.* **2010**, *162*, 115-133.
- [8] “Frequency Modulation Atomic Force Microscope Observation of TiO₂(110) Surfaces in Water”
A. Sasahara and M. Tomitori, *J. Vac. Sci. and Technol. B* **2010**, *28* (3), C4C5-C4C10.
- [9] “STM imaging of a model surface of Ru(4,4'-dicarboxy-2,2'-bipyridine)₂(NCS)₂ dye-sensitized TiO₂ photoelectrodes”
A. Sasahara, K. Fujio, N. Koide, L. Han, and H. Onishi, *Surf. Sci.* **2010**, *604* (2), 106-110.
- [10] “Optically excited near-surface phonons of TiO₂(110) observed by fourth-order coherent Raman spectroscopy”
T. Nomoto, A. Sasahara, and H. Onishi, *J. Chem. Phys.* **2009**, *131* (8), 084703 1-8.
- [11] “Metal-to-Oxide Charge Transfer Observed by a Kelvin Probe Force Microscope”
A. Sasahara, K. Hiehata, and H. Onishi, *Catal. Surv. Asia* **2009**, *13* (1), 9–15.
- [12] “An atomic force microscope study of vanadium-benzene sandwich clusters soft-landed on self-assembled monolayers”
S. Nagaoka, K. Ikemoto, K. Fujio, K. Hiehata, A. Sasahara, M. Mitsui, H. Onishi, and A. Nakajima, *Eur. Phys. J. D* **2009**, *52* (1-3), 103–106.
- [13] “Lateral Distribution of N3 Dye Molecules on TiO₂(110) Surface”
M. Ikeda, N. Koide, L. Han, C. L. Pang, A. Sasahara, and H. Onishi, *J. Photochem. Photobiol. A, Chem.*, **2009**, *202* (2-3), 185-190.
- [14] “Scanning Tunneling Microscope Study of Black Dye and Deoxycholic Acid Adsorbed on TiO₂(110)”
M. Ikeda, N. Koide, L. Han, A. Sasahara, and H. Onishi, *Langmuir*, **2008**, *24* (15), 8056-8060.
- [15] “Kelvin Probe Force Microscope Observation of Chlorine-Adsorbed TiO₂(110) Surfaces”
K. Hiehata, A. Sasahara, and H. Onishi, *Jpn. J. Appl. Phys.* **2008**, *47* (7), 6149-6152.
- [16] “Work Function on Dye-adsorbed TiO₂ Surfaces Measured by Using a Kelvin Probe Force

Microscope”

- M. Ikeda, N. Koide, L. Han, A. Sasahara, and H. Onishi, *J. Phys. Chem. C* **2008**, 112 (17), 6961-6967.
- [17] “Scanning Probe Microscopy Study of Ba Overlayers on TiO₂(110)”
C. L. Pang, A. Sasahara, and H. Onishi, *J. Phys. Chem. C* **2007**, 111 (26), 9221-9226.
- [18] “Local work function analysis of Pt/TiO₂ photocatalyst by Kelvin probe force microscope”
K. Hiehata, A. Sasahara, and H. Onishi, *Nanotechnology* **2007**, 18 (8), 084007 1-6.
- [19] “Scanning tunnelling microscopy study of ammonia adsorption on TiO₂(110)”
C. L. Pang, A. Sasahara, and H. Onishi, *Nanotechnology* **2007**, 18 (4), 044003 1-4.
- [20] “Local Work Function of Pt Clusters Vacuum-deposited on a TiO₂ Surface”
A. Sasahara, C. L. Pang, and H. Onishi, *J. Phys. Chem. B* **2006**, 110 (35), 17584-17588.
- [21] “Noncontact atomic force microscopy imaging of water dissociation products on TiO₂(110)”
C. L. Pang, A. Sasahara, H. Onishi, Q. Chen, and G. Thornton, *Phys. Rev. B* **2006**, 74 (7), 073411 1-4.
- [22] “Probe Microscope Observation of Pt Atoms Deposited on TiO₂(110)-(1×1) Surface”
A. Sasahara, C. L. Pang, and H. Onishi, *J. Phys. Chem. B* **2006**, 110 (27), 13453-13457.
- [23] “STM Observation of a Ruthenium Dye Adsorbed on a TiO₂(110) Surface”
A. Sasahara, C. L. Pang, and H. Onishi, *J. Phys. Chem. B* **2006**, 110 (10), 4751-4755.
- [24] “Photochemical Reaction of Trimethylacetates on Pt/TiO₂(110)”
H. Uetsuka, C. L. Pang, A. Sasahara and H. Onishi, *Langmuir* **2005**, 21 (25), 11802-11805.
- [25] “Topography of anatase TiO₂ film synthesized on LaAlO₃(001)”
A. Sasahara, T. C. Droubay, S. A. Chambers, H. Uetsuka, and H. Onishi, *Nanotechnology* **2005**, 16 (3), S18-S21.
- [26] “Oxygen-atom Vacancies Imaged by a Noncontact Atomic Force Microscope Operated in an Atmospheric Pressure of N₂ Gas”
A. Sasahara, S. Kitamura, H. Uetsuka, and H. Onishi, *J. Phys. Chem. B* **2004**, 108 (40), 15735-15737.
- [27] “Formate Adsorption on the (111) Surface of Rutile TiO₂”
H. Uetsuka, M. A. Henderson, A. Sasahara, and H. Onishi, *J. Phys. Chem. B* **2004**, 108 (36), 13706-13710.
- [28] “Individual Na Adatoms on TiO₂(110)-(1×1) Surface Observed Using Kelvin Probe Force Microscope”
A. Sasahara, H. Uetsuka, and H. Onishi, *Jpn. J. Appl. Phys.* **2004**, 43 (7B), 4647-4650.
- [29] “Topography of Rutile TiO₂(110) Surface Exposed to Water and Organic Solvents”
H. Uetsuka, A. Sasahara, and H. Onishi, *Langmuir* **2004**, 20 (11), 4782-4783.
- [30] “Non-contact atomic force microscopy using silicon cantilevers covered with organic monolayers via silicon-carbon covalent bonds”
M. Ara, A. Sasahara, H. Onishi, and H. Tada, *Nanotechnology* **2004**, 15 (2), S65-S68.
- [31] “The dependence of scanning tunneling microscope topography of carboxylates on their terminal group”
A. Sasahara, H. Uetsuka, T. Ishibashi, and H. Onishi, *J. Phys. Chem. B* **2003**, 107, (50) 13925-13928.
- [32] “Chemical Recognition at an Atomically Flat Surface of Metal Oxide”
H. Uetsuka, A. Sasahara, and H. Onishi, *J. Phys. Chem. B* **2003**, 107, (37) 9939-9942.
- [33] “Chemical Identification of Carboxylate Surfactants with One-Fluorine-Atom Sensitivity Achieved by Noncontact Atomic Force Microscopy”

- A. Sasahara, H. Uetsuka, and H. Onishi, *Langmuir*, **2003**, 19 (18), 7474-7477.
- [34] “Local work function of a rutile TiO₂(110)-(1×1) surface observed by Kelvin probe force microscopy”
A. Sasahara, H. Uetsuka, and H. Onishi, *Surf. Sci.* **2003**, 529 (1-2), L245-L250.
- [35] “Microscopic Identification of a Bimolecular Reaction Intermediate”
H. Uetsuka, A. Sasahara, and H. Onishi, *J. Phys. Chem. B* **2002**, 106 (44), 11549-11552.
- [36] “Formic Acid Adsorption on Anatase TiO₂(001)-(1×1) Thin Films Studied by NC-AFM and STM”
R. E. Tanner, A. Sasahara, Y. Liang, E. I. Altman, and H. Onishi, *J. Phys. Chem. B* **2002**, 106 (33), 8211-8222.
- [37] “Molecule-dependent Topography Determined by Noncontact Atomic Force Microscopy: Carboxylates on TiO₂(110)”
H. Onishi, A. Sasahara, H. Uetsuka, and T. Ishibashi, *Appl. Surf. Sci.* **2002**, 188 (3-4), 257-264.
- [38] “A Needle-like Organic Molecule Imaged by Noncontact Atomic Force Microscopy”
A. Sasahara, H. Uetsuka, and H. Onishi, *Appl. Surf. Sci.* **2002**, 188 (3-4), 265-271.
- [39] “Noncontact Atomic Force Microscope Topography Dependent on the Electrostatic Dipole Field of Individual Molecules”
A. Sasahara, H. Uetsuka, and H. Onishi, *Phys. Rev. B* **2001**, 64 (12), 121406(R) 1-4.
- [40] “Image topography of alkyl-substituted carboxylates observed by noncontact atomic force microscopy”
A. Sasahara, H. Uetsuka, and H. Onishi, *Surf. Sci.* **2001**, 481 (1-3), L437-L442.
- [41] “NC-AFM topography of HCOO and CH₃COO molecules co-adsorbed on TiO₂(110)”
A. Sasahara, H. Uetsuka, and H. Onishi, *Appl. Phys. A* **2001**, 72 (7), S101-S103.
- [42] “Single-Molecule Analysis by Noncontact Atomic Force Microscopy”
A. Sasahara, H. Uetsuka, and H. Onishi, *J. Phys. Chem. B* **2001**, 105 (1), 1-4.
- [43] “Reconstructive Activation of Bimetallic Surfaces -Catalytic Reduction of NO with H₂ on Pt(100), Pt(110), Rh(100), Rh(110) and Bimetallic Single Crystal Surfaces of Rh/Pt(100), Rh/Pt(110), Pt/Rh(100), and Pt/Rh(110)-”
K. Tanaka and A. Sasahara, *J. Mol. Catal. A: Chem.* **2000**, 155 (1-2), 13-22.
- [44] “Noncontact-Mode Atomic Force Microscopy Observation of α-Al₂O₃(0001) Surface”
A. Sasahara, H. Uetsuka, and H. Onishi, *Jpn. J. Appl. Phys.* **2000**, 39 (6B), 3773-3776.
- [45] “Scanning Tunneling Microscopy Study of Surface Reconstruction of Rutile TiO₂(111)”
H. Uetsuka, A. Sasahara, and H. Onishi, *Jpn. J. Appl. Phys.* **2000**, 39 (6B), 3769-3772.
- [46] “Non-linear behavior in the NO-H₂ reaction over Ir(110)”
C. A. de Wolf, B. E. Nieuwenhuys, A. Sasahara, K. Tanaka, M. M. Slinko, and M. Yu. Smirnov, *Surf. Sci.* **1998**, 411 (3), L904-L909.
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A. Sasahara, H. Tamura, and K. Tanaka, *J. Phys. Chem. B* **1997**, 101 (7), 1186-1189.
- [48] “Roles of Rh Atoms on Pt-Based Catalysts for NO+H₂ reactions: Comparison of Pt(110) and Pt(100) Surfaces with Rh/Pt(110) and Rh/Pt(100) Bimetallic Surfaces”
A. Sasahara, H. Tamura, and K. Tanaka, *J. Phys. Chem.* **1996**, 100 (37), 15229-15234.
- [49] “Mechanism of chemical activation of Pt-Rh alloy and Pt/Rh bimetallic single crystal surfaces”
H. Tamura, A. Sasahara, and K. Tanaka, *Catalysis and Automotive Pollution Control III, Studies in Surface Science and Catalysis* **1995**, 96, 229-236.
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- H. Tamura, A. Sasahara, and K. Tanaka, *J. Electroanal. Chem.* **1995**, 381 (1-2), 95-98.
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A. Sasahara, H. Tamura, and K. Tanaka, *Catal. Lett.* **1994**, 28 (2-4), 161-166.
- [52] “Activation of the Pt deposited Rh(100) bimetallic surface by chemical ordering”
H. Tamura, A. Sasahara, and K. Tanaka, *Surf. Sci.* **1994**, 303 (3), L379-L384.

Chapters in books

- [1] “Local Work Function of Catalysts and Photoelectrodes”
A. Sasahara and H. Onishi, Springer, *Kelvin Probe Force Microscopy: Measuring and Compensating Electrostatic Forces*, Edited by S. Sadewasser and T. Glatzel, Berlin 2011, 201-220.
- [2] “Noncontact Atomic Force Microscopy and its Related Topics, Applications to Molecules”
A. Sasahara and H. Onishi, *Springer Handbook of Nanotechnology*; Edited by B. Bhushan, Springer, Berlin 2004, 404-407.
- [3] “Single-Molecule Analysis by NC-AFM”
A. Sasahara and H. Onishi, *Noncontact Atomic Force Microscopy* Edited by S. Morita, R. Wiesendanger, and E. Meyer, Springer, Berlin 2002, 215-231.
- [4] “Structure and Reactivity of Rhodium and Rhodium-Based Alloys”
K. Tanaka and A. Sasahara, *Interfacial Electrochemistry –Theory, Experiment and Applications-* Edited by A. Wieckowski, Marcel Dekker, Inc., New York, 1999, 493-512.
- [5] “Structure and Catalysis of Rh-Pt(100), Rh-Pt(110), Pt-Rh(100), and Pt-Rh(110) Surfaces Prepared by Electrochemical Deposition”
K. Tanaka, Y. Okawa, A. Sasahara, and Y. Matsumoto, *Solid-Liquid Electrochemical Interfaces* Edited by G. Jerkiewicz, M. P. Soriaga, K. Uosaki, and A. Wieckowski, ACS symposium series 656, Chapter 18 (1996) 245-273.

Journal articles in Japanese

- [1] 「身近になりつつある酸化物表面の原子スケール観察」
笹原 亮、富取 正彦 *未来材料* **2010**, 11, 2-5.
- [2] 「非接触型原子間力顕微鏡の触媒研究への応用」
笹原 亮、大西 洋 *表面科学* **2006**, 27, (6) 348-353.
- [3] 「走査プローブ顕微鏡を利用した触媒電荷移動の検出」
笹原 亮、大西 洋 *ペトロテック* **2005**, 28, 254-258.
- [4] 「白金単一原子およびクラスターから二酸化チタンへの電荷移動のケルビン力顕微鏡による観察」
笹原 亮、Chi Lun PANG、大西 洋 *触媒* **2004**, 46, (6) 489-491.
- [5] 「個々のナトリウム原子から二酸化チタン担体へ移動した電荷量の評価」
笹原 亮、上塚 洋、大西 洋 *触媒* **2003**, 45, (6) 436-438.
- [6] 「吸着有機分子の非接触型原子間力顕微鏡観察 –分子像の定量的理解に向けて–」
笹原 亮、上塚 洋、石橋 孝章、大西 洋 *表面科学* **2002**, 23, (3) 186-193.
- [7] 「高温・高圧反応下の固体表面と生成ガスの同時観察」
笹原 亮 *表面科学* **2002**, 23, (11) 726.
- [8] 「非接触型原子間力顕微鏡による触媒反応中間体の識別」
笹原 亮 *応用物理* **2001**, 70, (10) 1203-1204.
- [9] 「非接触型原子間力顕微鏡による吸着分子の化学分析」
笹原 亮、上塚 洋、大西 洋 *触媒* **2001**, 43, (2) 122-124.

- [10] 「原子レベルで達成された STM チップを用いた表面のフォトンマッピング」
 笹原 亮 表面科学 **2000**, *21*, (2) 119.
- [11] 「NC-AFM による単分子識別：分子サイズ及び永久双極子の画像化」
 笹原 亮、上塚 洋、大西 洋 *Molecular Electronics and Bioelectronics* (応用物理学会 有機分子・バイオエレクトロニクス分科会研究会会誌) **2000**, *11*, (4) 271-276.

Invited talks

- [1] “Nanoscale analysis of dye-modified titanium dioxide surfaces by scanning probe microscopy”
 A. Sasahara, Asia-Pacific Interfinish 2010, October 2010, Biopolice, Singapore
 October 21, 2010
- [2] “Scanning Probe Microscope Studies of Dye-Adsorbed Titanium Dioxide Surfaces”
 A. Sasahara, Naoki Koide, Liyuan Han, Hiroshi Onish, and Masahiko Tomitori, NIMS
 Conference July 2010, Tsukuba
 July 13, 2010
- [3] 「担持金属触媒モデル表面のナノスケール電荷分布解析」
 笹原 亮 第 29 回表面科学学術講演会 2009 年 10 月 東京
 2009 年 10 月 29 日
- [4] 「走査プローブ顕微鏡を用いた太陽電池電極モデル表面の研究」
 笹原 亮 国際基督教大学 NS フォーラム 2009 年 4 月 東京
 2009 年 4 月 18 日
- [5] 「ケルビン顕微鏡を用いた局所仕事関数計測にもとづく色素分子-二酸化チタン間の電荷移動の
 考察」
 笹原 亮、大西 洋 第 2 回局所仕事関数研究会 2007 年 3 月 東京
- [6] 「二酸化チタン表面に吸着した白金のケルビン力顕微鏡による観察」
 笹原 亮、大西 洋 第 1 回局所仕事関数研究会 2005 年 12 月 東京
- [7] 「一気圧室素雰囲気中での原子分解能観察」
 笹原 亮、大西 洋 日本学術振興会ナノプローブテクノロジー第 167 委員会 第 39 回研究会
 「nc-AFM の新展開」 2005 年 7 月 東京
- [8] 「NC-AFM による単分子識別：分子サイズ及び永久双極子の画像化」
 笹原 亮、上塚 洋、大西 洋 秋期応用物理学 有機分子・バイオエレクトロニクス分科会研究会
 2000 年 11 月 東京

Presentations in international conferences

- [1] “FM-AFM observation of $\text{TiO}_2(100)$ surfaces in water”
 C. L. Pang, A. Sasahara, and M. Tomitori
 13th International Conference on Noncontact Atomic Force Microscopy, August 2010,
 Kanazawa, Japan
- [2] “Frequency Modulation Atomic Force Microscope Study of $\text{TiO}_2(110)$ Surfaces in Water”
 A. Sasahara and M. Tomitori
 JAIST-CNSI Workshop, January 2010, Nomi, Japan
- [3] “Analysis of a Rutile $\text{TiO}_2(110)$ Surface in Water by Noncontact Atomic Force Microscope”
 A. Sasahara and M. Tomitori
 7th International Workshop on Metal Oxides (IWOX-IV), January 2010, Echigo-Yuzawa, Japan
- [4] “Noncontact Atomic Force Microscope Observation of $\text{TiO}_2(110)$ Surface in Pure Water”
 A. Sasahara, Y. Jeong, and M. Tomitori
 12th International Conference on Noncontact Atomic Force Microscopy, August 2009, New
 Haven, US
- [5] “Scanning Probe Microscope Study of Dye-Sensitized $\text{TiO}_2(110)$ ”

- A. Sasahara, M. Ikeda, N. Koide, L. Han, and H. Onishi
17th Photovoltaic Science and Engineering Conference (PVSEC), December 2007, Fukuoka
- [6] "SPM analysis of individual dye molecules on $\text{TiO}_2(110)$ "
A. Sasahara, M. Ikeda, N. Koide, L. Han, and H. Onishi
14th International Colloquium on Scanning Probe Microscopy (ICSPM14), December 2006, Shizuoka
- [7] "Local Work Function on Pt-Deposited TiO_2 Surface"
A. Sasahara, C. Pang, and H. Onishi
Fifth Tokyo Conference on Advanced Catalytic Science and Technology (TOCAT5), July 2006, Tokyo
- [8] "Kelvin probe force microscope analysis of Pt clusters on TiO_2 surface"
A. Sasahara, C. Pang, and H. Onishi
Ninth International Conference on Non-Contact Atomic Force Microscopy (NC-AFM2006), July 2006, Kobe
- [9] "Work Function Measurement of Individual Pt Clusters by Kelvin Probe Force Microscope"
A. Sasahara, C. Pang, K. Matsubara, and H. Onishi
Joint International Symposium on Creation of Nanoscale Designed Surfaces and their Electronic and Catalytic Properties, 2005, Tokyo
- [10] "Na adatoms on $\text{TiO}_2(110)$ observed by Kelvin probe force microscope"
A. Sasahara, H. Uetsuka, and H. Onishi
Sixth International Conference on Non-Contact Atomic Force Microscopy (NC-AFM2003), September 2003, Ireland
- [11] "Interpretation of noncontact atomic force microscope topography of formate and acetate"
T. Sato, A. Sasahara, H. Uetsuka, H. Sakama, and H. Onishi
Sixth International Conference on Non-Contact Atomic Force Microscopy (NC-AFM2003), September 2003, Ireland
- [12] "Surface Potential Mapping of TiO_2 Surfaces by Kelvin Probe Force Microscopy"
A. Sasahara, H. Uetsuka, and H. Onishi
Third International Workshop on Oxide Surfaces (IWOX-3), January 2003, Sapporo
- [13] "Kelvin Probe Force Microscope Observation of TiO_2 Surfaces"
A. Sasahara, H. Uetsuka, and H. Onishi
Fifth International Conference on Non-Contact Atomic Force Microscopy (NC-AFM2002), August 2002, Canada
- [14] "Anatase $\text{TiO}_2(001)-(1\times4)$ Thin Films Probed by NC-AFM and STM"
R. E. Tanner, A. Sasahara, Y. Liang, E. I. Altman, and H. Onishi
Fifth International Conference on Non-Contact Atomic Force Microscopy (NC-AFM2002), August 2002, Canada
- [15] "A Needle-like Organic Molecule Imaged by Noncontact Atomic Force Microscopy"
A. Sasahara, H. Uetsuka, and H. Onishi
Fourth International Conference on Non-Contact Atomic Force Microscopy (NC-AFM2001), September 2001, Kyoto
- [16] "Does NC-AFM topography reflect the physical Topography of an adsorbed organic molecule?"
A. Sasahara, H. Uetsuka, and H. Onishi
Third International Conference on Non-Contact Atomic Force Microscopy (NC-AFM 2000), July. 2000, Germany
- [17] "Non-Contact AFM Observation of $\alpha\text{-Al}_2\text{O}_3(0001)$ Surface"
A. Sasahara, H. Uetsuka, and H. Onishi
The 7th International Colloquium on Scanning Tunneling Microscopy, December 1999,

Shizuoka