Curriculum Vitae

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Born in March 1967 in Tokyo, Japan

Research Interests
- Physics and application of low-dimensional structures
- Silicon nanostructures and their application to nanodevices
- Single-electron devices and their applications

Education
- 1994 Ph.D. in Applied Physics, The University of Tokyo
- 1991 M.S. in Applied Physics, The University of Tokyo
- 1989 B.S. in Applied Physics, The University of Tokyo

Employment
- 2015- Senior Distinguished Scientist, NTT BRL
- 2012-2020 Manager of Physical Science Laboratory, NTT BRL
- 2007-2015 Distinguished technical member, NTT BRL
- 2006-2020 Group leader of Nanodevices Research Group, NTT BRL
- 1996 NTT Basic Research Laboratories (BRL)
- 1994 NTT LSI Laboratories

Professional Activities
- 2017.10-2023.9 Science Council of Japan, member
- 2016, 2012, 2019 Examiner of Ph. D. thesis, UNSW
- 2014, 2011, 2008 Examiner of Ph. D. thesis, Tokyo Tech.
- 2013.4-2014.3 Visiting Professor, Hokkaido University
- 2011.4-2012.3 Japanese Society of Applied Physics(JSAP) Executive Director
- 2010.4-2011.3 Japanese Society of Applied Physics(JSAP) Director
- 2003.7-2004.7 Guest researcher at the National Institute of Standards and Technology (NIST), Gaithersburg, MD, USA
- 2007.8 Lecturer(Non-Full-time), The University of Tokyo

Awards and Honors
- JSAP Fellow, 2020
- IEEE Fellow, 2018
- Prizes for Science and Technology (Research Category), The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (MEXT), 2017
- Japanese Journal of Applied Physics (JJAP) Paper Awards, 2013
- The Young Scientists' Prize, The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (MEXT), 2006.
- Japanese Journal of Applied Physics (JJAP) Paper Awards, 2006
- Japanese Journal of Applied Physics (JJAP) Paper Awards, 2003 (1st author)

- SSDM (International Conference on Solid State Devices and Materials) Paper Award, 1999
- SSDM (International Conference on Solid State Devices and Materials) Young Researcher Award, 1998

Committee/International Conference Activities

- Co-chair of Silicon Quantum Electronics Workshop, Takamatsu, Aug. 3-4, 2015.
- Co-chair of International Symposium on Nanoscale Transport and Technology ISNTT 2013, Atsugi, Nov. 17-20 2015.
- Program vice chair of Int. Conf. on Solid State Devices and Materials (SSDM 2014), Tsukuba, Sept. 2014.
- Co-chair of International Symposium on Nanoscale Transport and Technology ISNTT 2013, Atsugi, Nov. 2013.
- Program vice chair of Int. Conf. on Solid State Devices and Materials (SSDM 2013), Fukuoka, Sept. 2013.
- Program vice chair of APPC12（the 12th Asia Pacific Physics Conference）, Makuhari, Japan, July, 2013.
- Co-chair of Workshop on Innovative Devices and Systems (WINDS) , Hawaii, USA, Dec. 2-7 2012.
- Special committee of Emerging Research Devices WG, STRJ (Semiconductor Technology Roadmap Committee of Japan) 2008.10-2016.4

Government Fund

- 2018-2022 JSPS KAKENHI S (Quantum Standards and Ultimate Precision Measurements Based on Single Electrons)
- 2011-2014 The Funding Program for Next Generation World-Leading Researchers (NEXT Program), JSPS

Publications:

[1] N. Ogasawara, A. Fujiwara, N. Ohgushi, S. Fukatsu, Y. Shiraki, Y. Katayama, and R. Ito: Well-Width Dependence of Photoluminescence Excitation-Spectra in Gaas-Alxga1-Xas Quantum-Wells, *Physical Review B* **42**, 9562-9565 (1990).

[2] A. Fujiwara, S. Fukatsu, Y. Shiraki, and R. Ito: Resonant Electron-Capture in Algaas/Gaas Quantum-Well Structures, *Institute of Physics Conference Series*, 195-198 (1992).

[3] A. Fujiwara, S. Fukatsu, Y. Shiraki, and R. Ito: Observation of Resonant Electron-Capture in Algaas/Gaas Quantum-Well Structures, *Surface Science* **263**, 642-645 (1992).

[4] S. Fukatsu, H. Yoshida, A. Fujiwara, Y. Takahashi, Y. Shiraki, and R. Ito: Spectral Blue Shift of Photoluminescence in Strained-Layer Si1-Xgex/Si Quantum-Well Structures Grown by Gas-Source Si Molecular-Beam Epitaxy, *Applied Physics Letters* **61**, 804-806 (1992).

[5] S. Fukatsu, H. Yoshida, N. Usami, A. Fujiwara, Y. Takahashi, Y. Shiraki, and R. Ito: Systematic Blue Shift of Exciton Luminescence in Strained Si1-Xgex/Si Quantum-Well Structures Grown by Gas Source Silicon Molecular-Beam Epitaxy, *Thin Solid Films* **222**, 1-4 (1992).

[6] S. Fukatsu, H. Yoshida, N. Usami, A. Fujiwara, Y. Takahashi, Y. Shiraki, and R. Ito: Quantum Size Effect of Excitonic Band-Edge Luminescence in Strained Si1-Xgex/Si Single Quantum-Well Structures Grown by Gas-Source Si Molecular-Beam Epitaxy, *Japanese Journal of Applied Physics Part 2-Letters* **31**, L1319-L1321 (1992).

[7] S. Fukatsu, N. Usami, H. Yoshida, A. Fujiwara, Y. Takahashi, Y. Shiraki, and R. Ito: Intense

Photoluminescence from Strained Si1-Xgex/Si Quantum-Well Structures, *Journal of Crystal Growth* **127**, 489-493 (1993).

[8] A. Fujiwara, S. Fukatsu, and Y. Shiraki, in *Gallium Arsenide and Related Compounds 1993*, (1994), Vol. 136, p. 245-248.

[9] S. Fukatsu, A. Fujiwara, K. Muraki, Y. Takahashi, and Y. Shiraki: Time-of-Flight Measurement of Carrier Transport and Carrier Collection in Strained Si1-Xgex/Si Quantum-Wells, *Journal of Vacuum Science & Technology B* **12**, 1156-1159 (1994).

[10] K. Muraki, Y. Takahashi, A. Fujiwara, S. Fukatsu, and Y. Shiraki: Enhancement of Free-to-Bound Transitions Due to Resonant Electron-Capture in Be-Doped Algaas/Gaas Quantum-Wells, *Solid-State Electronics* **37**, 1247-1250 (1994).

[11] A. Fujiwara, K. Muraki, S. Fukatsu, Y. Shiraki, and R. Ito: Enhancement of Nonradiative Recombination Due to Resonant Electron-Capture in Alxga1-Xas/Gaas Quantum-Well Structures, *Physical Review B* **51**, 14324-14329 (1995).

[12] A. Fujiwara, Y. Takahashi, S. Fukatsu, Y. Shiraki, and R. Ito: Resonant Electron-Capture in Alxga1-Xas/Alas/Gaas Quantum-Wells, *Physical Review B* **51**, 2291-2301 (1995).

[13] K. Muraki, A. Fujiwara, S. Fukatsu, Y. Shiraki, and Y. Takahashi: Evidence for resonant electron capture and charge buildup in GaAs/AlxGa1-xAs quantum wells, *Physical Review B* **53**, 15477-15480 (1996).

[14] A. Fujiwara, Y. Takahashi, K. Murase, and M. Tabe: Time-Resolved Measurement of Single-Electron Tunneling in a Si Single-Electron Transistor with Satellite Si Islands, *Applied Physics Letters* **67**, 2957-2959 (1995).

[15] Y. Takahashi, A. Fujiwara, M. Nagase, H. Namatsu, K. Kurihara, K. Iwadate, and K. Murase: Si single-electron transistors on SIMOX substrates, *Ieice Transactions on Electronics* **E79C**, 1503-1508 (1996).

[16] Y. Takahashi, S. Horiguchi, A. Fujiwara, and K. Murase: Co-tunneling current in very small Si single-electron transistors, *Physica B* **227**, 105-108 (1996).

[17] A. Fujiwara, Y. Takahashi, and K. Murase: Observation of single electron-hole recombination and photon-pumped current in an asymmetric Si single-electron transistor, *Physical Review Letters* **78**, 1532-1535 (1997).

[18] A. Fujiwara, Y. Takahashi, H. Namatsu, K. Kurihara, and K. Murase: Suppression of effects of parasitic metal-oxide-semiconductor field-effect transistors on Si single-electron transistors, *Japanese Journal of Applied Physics Part 1-Regular Papers Short Notes & Review Papers* **37**, 3257-3263 (1998).

[19] M. Nagase, A. Fujiwara, K. Yamazaki, Y. Takahashi, K. Murase, and K. Kurihara: Si nanostructures formed by pattern-dependent oxidation, *Microelectronic Engineering* **42**, 527-530 (1998).

[20] S. Sasaki, K. Tsubaki, S. Tarucha, A. Fujiwara, and Y. Takahashi: Observation of shot noise suppression at the peaks of Coulomb oscillations, *Solid-State Electronics* **42**, 1429-1431 (1998).

[21] Y. Takahashi, A. Fujiwara, and S. Murase: Quantized conductance in a small one-dimensional Si wire on a thin silicon-on-insulator substrate fabricated using SiN-film-masked oxidation, *Semiconductor Science and Technology* **13**, 1047-1051 (1998).

[22] Y. Takahashi, A. Fujiwara, K. Yamazaki, H. Namatsu, K. Kurihara, and K. Murase: Si memory device operated with a small number of electrons by using a single-electron-transistor detector, *Electronics Letters* **34**, 45-46 (1998).

[23] K. Yamazaki, A. Fujiwara, Y. Takahashi, H. Namatsu, and K. Kurihara: Sub-10-nm overlay accuracy in electron beam lithography for nanometer-scale device fabrication, *Japanese Journal of Applied Physics Part 1-Regular Papers Short Notes & Review Papers* **37**, 6788-6791 (1998).

[24] A. Fujiwara, Y. Takahashi, and K. Murase: Asymmetric tunnel barrier in a Si single-electron transistor, *Microelectronic Engineering* **47**, 197-199 (1999).

[25] A. Fujiwara, Y. Takahashi, K. Yamazaki, H. Namatsu, M. Nagase, K. Kurihara, and K. Murase: Double-island single-electron devices - A useful unit device for single-electron logic LSI's, *Ieee*

Transactions on Electron Devices **46**, 954-959 (1999).
[26] Y. Takahashi, A. Fujiwara, M. Nagase, H. Namatsu, K. Kurihara, K. Iwadate, and K. Murase: Silicon single-electron devices, *International Journal of Electronics* **86**, 605-639 (1999).
[27] Y. Takahashi, A. Fujiwara, K. Yamazaki, H. Namatsu, K. Kurihara, and K. Murase: A Si memory device composed of a one-dimensional metal-oxide-semiconductor field-effect-transistor switch and a single-electron-transistor detector, *Japanese Journal of Applied Physics Part 1-Regular Papers Short Notes & Review Papers* **38**, 2457-2461 (1999).
[28] Y. Takahashi, A. Fujiwara, K. Yamazaki, H. Namatsu, K. Kurihara, and K. Murase: Multigate single-electron transistors and their application to an exclusive-OR gate, *Applied Physics Letters* **76**, 637-639 (2000).
[29] A. Fujiwara and Y. Takahashi: Manipulation of elementary charge in a silicon charge-coupled device, *Nature* **410**, 560-562 (2001).
[30] H. Inokawa, A. Fujiwara, and Y. Takahashi: Multipeak negative-differential-resistance device by combining single-electron and metal-oxide-semiconductor transistors, *Applied Physics Letters* **79**, 3618-3620 (2001).
[31] N. M. Zimmerman, W. H. Huber, A. Fujiwara, and Y. Takahashi: Excellent charge offset stability in a Si-based single-electron tunneling transistor, *Applied Physics Letters* **79**, 3188-3190 (2001).
[32] A. Fujiwara and Y. Takahashi: Si nano-devices using an electron-hole system, *Journal De Physique Iv* **12**, 85-92 (2002).
[33] A. Fujiwara and Y. Takahashi: Mechanism of single-charge detection using electron-hole system in Si-wire transistors, *Japanese Journal of Applied Physics Part 1-Regular Papers Short Notes & Review Papers* **41**, 1209-1213 (2002).
[34] A. Fujiwara, K. Yamazaki, and Y. Takahashi: Detection of single charges and their generation-recombination dynamics in Si nanowires at room temperature, *Applied Physics Letters* **80**, 4567-4569 (2002).
[35] H. Inokawa, A. Fujiwara, and Y. Takahashi: A merged single-electron transistor and metal-oxide-semiconductor transistor logic for interface and multiple-valued functions, *Japanese Journal of Applied Physics Part 1-Regular Papers Short Notes & Review Papers* **41**, 2566-2568 (2002).
[36] K. T. Liu, A. Fujiwara, Y. Takahashi, K. Murase, and Y. Horikoshi: Voltage gain of Si single-electron transistor and analysis of performance of n-metal-oxide-semiconductor type inverter with resistive load, *Japanese Journal of Applied Physics Part 1-Regular Papers Short Notes & Review Papers* **41**, 458-463 (2002).
[37] A. Nagase, S. Horiguchi, A. Fujiwara, Y. Ono, K. Yamazaki, H. Namatsu, and Y. Takahashi: Single-electron devices formed by pattern-dependent oxidation: microscopic structural evaluation, *Applied Surface Science* **190**, 144-150 (2002).
[38] Y. Takahashi, Y. Ono, A. Fujiwara, and H. Inokawa: Silicon single-electron devices, *Journal of Physics-Condensed Matter* **14**, R995-R1033 (2002).
[39] A. Fujiwara, S. Horiguchi, M. Nagase, and Y. Takahashi: Threshold voltage of Si single-electron transistor, *Japanese Journal of Applied Physics Part 1-Regular Papers Short Notes & Review Papers* **42**, 2429-2433 (2003).
[40] S. Fukatsu, T. Takahashi, K. M. Itoh, M. Uematsu, A. Fujiwara, H. Kageshima, Y. Takahashi, and K. Shiraishi: The effect of partial pressure of oxygen on self-diffusion of Si in SiO2, *Japanese Journal of Applied Physics Part 2-Letters* **42**, L1492-L1494 (2003).
[41] S. Fukatsu, T. Takahashi, K. M. Itoh, M. Uematsu, A. Fujiwara, H. Kageshima, Y. Takahashi, K. Shiraishi, and U. Gosele: Effect of the Si/SiO2 interface on self-diffusion of Si in semiconductor-grade SiO2, *Applied Physics Letters* **83**, 3897-3899 (2003).
[42] H. Inokawa, A. Fujiwara, and Y. Takahashi: A multiple-valued logic and memory with combined single-electron and metal-oxide-semiconductor transistors, *Ieee Transactions on Electron Devices* **50**, 462-470 (2003).

[43] M. Nagase, A. Fujiwara, K. Kurihara, and H. Namatsu: Nanometrology of Si nanostructures embedded in SiO2 using scanning electron microscopy, *Japanese Journal of Applied Physics Part 1-Regular Papers Short Notes & Review Papers* **42**, 318-325 (2003).
[44] M. Nagase, S. Horiguchi, A. Fujiwara, and Y. Takahashi: Microscopic observations of single-electron island in Si single-electron transistors, *Japanese Journal of Applied Physics Part 1-Regular Papers Short Notes & Review Papers* **42**, 2438-2443 (2003).
[45] M. Nagase, S. Horiguchi, K. Shiraishi, A. Fujiwara, and Y. Takahashi: Single-electron devices formed by thermal oxidation, *Journal of Electroanalytical Chemistry* **559**, 19-23 (2003).
[46] H. Namatsu, Y. Watanabe, K. Yamazaki, T. Yamaguchi, M. Nagase, Y. Ono, A. Fujiwara, and S. Horiguchi: Fabrication of Si single-electron transistors with precise dimensions by electron-beam nanolithography, *Journal of Vacuum Science & Technology B* **21**, 1-5 (2003).
[47] H. Namatsu, Y. Watanabe, K. Yamazaki, T. Yamaguchi, M. Nagase, Y. Ono, A. Fujiwara, and S. Horiguchi: Influence of oxidation temperature on Si single-electron transistor characteristics, *Journal of Vacuum Science and Technology B***21**, 2869 – 2873 (2003).
[48] T. Takahashi, S. Fukatsu, K. M. Itoh, M. Uematsu, A. Fujiwara, H. Kageshima, Y. Takahashi, and K. Shiraishi: Self-diffusion of Si in thermally grown SiO2 under equilibrium conditions, *Journal of Applied Physics* **93**, 3674-3676 (2003).
[49] Y. Takahashi, Y. Ono, A. Fujiwara, and H. Inokawa: Development of silicon single-electron devices, *Physica E-Low-Dimensional Systems & Nanostructures* **19**, 95-101 (2003).
[50] A. Fujiwara, N. M. Zimmerman, Y. Ono, and Y. Takahashi: Current quantization due to single-electron transfer in Si-wire charge-coupled devices, *Applied Physics Letters* **84**, 1323-1325 (2004).
[51] S. Horiguchi, A. Fujiwara, H. Inokawa, and Y. Takahashi: Analysis of back-gate voltage dependence of threshold voltage of thin silicon-on-insulator metal-oxide-semiconductor field-effect transistor and its application to Si single-electron transistor, *Japanese Journal of Applied Physics Part 1-Regular Papers Short Notes & Review Papers* **43**, 2036-2040 (2004).
[52] S. M. Koo, A. Fujiwara, J. P. Han, E. M. Vogel, C. A. Richter, and J. E. Bonevich: High inversion current in silicon nanowire field effect transistors, *Nano Letters* **4**, 2197-2201 (2004).
[53] K. Nishiguchi, H. Inokawa, Y. Ono, A. Fujiwara, and Y. Takahashi: Multifunctional Boolean logic using single-electron transistors, *Ieice Transactions on Electronics* **E87C**, 1809-1817 (2004).
[54] K. Nishiguchi, H. Inokawa, Y. Ono, A. Fujiwara, and Y. Takahashi: Multilevel memory using an electrically formed single-electron box, *Applied Physics Letters* **85**, 1277-1279 (2004).
[55] K. Nishiguchi, H. Inokawa, Y. Ono, A. Fujiwara, and Y. Takahashi: Multilevel memory using single-electron turnstile, *Electronics Letters* **40**, 229-230 (2004).
[56] K. Nishiguchi, H. Inokawa, Y. Ono, A. Fujiwara, and Y. Takahashi: Automatic control of oscillation phase of a single-electron transistor, *Ieee Electron Device Letters* **25**, 31-33 (2004).
[57] K. Takashina, A. Fujiwara, S. Horiguchi, Y. Takahashi, and Y. Hirayama: Valley splitting control in SiO2/Si/SiO2 quantum wells in the quantum Hall regime, *Physical Review B* **69** (2004).
[58] K. Takashina, A. Fujiwara, Y. Takahashi, and Y. Hirayama: Resistance spikes induced by gate-controlled valley-splitting in silicon, *International Journal of Modern Physics B* **18**, 3603-3608 (2004).
[59] K. Takashina, Y. Hirayama, A. Fujiwara, S. Horiguchi, and Y. Takahashi: A silicon bi-layer system, *Physica E-Low-Dimensional Systems & Nanostructures* **22**, 72-75 (2004).
[60] N. M. Zimmerman, E. Hourdakis, Y. Ono, A. Fujiwara, and Y. Takahashi: Error mechanisms and rates in tunable-barrier single-electron turnstiles and charge-coupled devices, *Journal of Applied Physics* **96**, 5254-5266 (2004).
[61] K. Nishiguchi, O. Crauste, H. Namatsu, S. Horiguchi, Y. Ono, A. Fujiwara, Y. Takahashi, and H. Inokawa: Back-gate effect on Coulomb blockade in silicon-on-insulator trench wires, *Japanese Journal of Applied Physics Part 1-Regular Papers Brief Communications & Review Papers* **44**, 7717-7719 (2005).

[62] Y. Ono, A. Fujiwara, K. Nishiguchi, H. Inokawa, and Y. Takahashi: Manipulation and detection of single electrons for future information processing, *Journal of Applied Physics* **97** (2005).
[63] A. Fujiwara, H. Inokawa, K. Yamazaki, H. Namatsu, Y. Takahashi, N. M. Zimmerman, and S. B. Martin: Single electron tunneling transistor with tunable barriers using silicon nanowire metal-oxide-semiconductor field-effect transistor, *Applied Physics Letters* **88** 053121 (2006).
[64] K. Nishiguchi, A. Fujiwara, Y. Ono, H. Inokawa, and Y. Takahashi: Room-temperature-operating data processing circuit based on single-electron transfer and detection with metal-oxide-semiconductor field-effect transistor technology, *Applied Physics Letters* **88** 183101 (2006).
[65] K. Takashina, Y. Ono, A. Fujiwara, Y. Takahashi, and Y. Hirayama: Valley polarization in Si(100) at zero magnetic field, *Physical Review Letters* **96** 236801 (2006).
[66] N. M. Zimmerman, A. Fujiwara, H. Inokawa, and Y. Takahashi: Electrostatically gated Si devices: Coulomb blockade and barrier capacitance, *Applied Physics Letters* **89** 052102 (2006).
[67] K. Nishiguchi, A. Fujiwara, Y. Ono, H. Inokawa, and Y. Takahashi: Long Retention of Gain-Cell Dynamic Random Access Memory With Undoped Memory Node, *IEEE Electron Devices Letters* **28** 48-50 (2006).
[68] N. M. Zimmerman, B. J. Simonds, A. Fujiwara, Y. Ono, Y. Takahashi, and H. Inokawa: Charge offset stability in tunable-barrier Si single-electron transistor, *Applied Physics Letters* **90** 033507 (2006).
[69] K. Takashina, Y. Ono, A. Fujiwara, Y. Takahashi, and Y. Hirayama: Intersubband Scattering in Double-Gate MOSFETs, *IEEE Transaction on Nanotechnology* **5** 430-435 (2006).
[70] W. C .Zhang, K. Nishiguchi, Y. Ono, A. Fujiwara, H. Yamaguchi, H. Inokawa, Y. Takahashi, and N. J. Wu: Transfer and detection of single electrons using metal-oxide-semiconductor field-effect-transistors, IEICE Trans. Electron. **E-90C**, No. 5, 943 – 948 (2007).
[71] K. Nishiguchi, A. Fujiwara, Y. Ono, H. Inokawa, and Y. Takahashi: Infrared detection with silicon nano-field-effect transistors, *Applied Physics Letters* **90**, 223108 (2007).
[72] Y. Ono, K. Nishiguchi, A. Fujiwara, H. Yamaguchi, H. Inokawa, and Y. Takahashi: Conductance modulation by individual acceptors in Si nanoscale field-effect transistors *Applied Physics Letters* **90**, 102106 (2007).
[73] K. Takashina, M. Brun, T. Ota, D. K. Maude, A. Fujiwara, Y. Ono, Y. Takahashi, and Y. Hirayama: Anomalous resistance ridges along filling factor v = 4i , *Phys. Rev. Lett.* **99**, 036803 (2007).
[74] M. A. H. Khalafalla, Y. Ono, K. Nishiguchi, and A. Fujiwara: Identification of single and coupled acceptors in silicon nano-field-effect transistors, *Applied Physics Letters* **91**, 263513 (2007).
[75] A. Fujiwara, K. Nishiguchi, and Y. Ono: Nanoampere charge pump by single-electron ratchet using silicon nanowire metal-oxide-semiconductor field-effect transistor: *APPLIED PHYSICS LETTERS* **92**, 042102 (2008).
[76] K. Nishiguchi, M. Nagase, T. Yamaguchi, A. Fujiwara, and H. Yamaguchi: Low-energy electron emission using a Si/SiO2/Si cathode for nano-decomposition, *Japanese Journal of Applied Physics* (accepted).
[77] K. Nishiguchi, Y. Ono, A. Fujiwara, H. Inokawa, and Y. Takahashi : Stochastic data processing circuit based on single electrons using nano field-effect transistor, *APPLIED PHYSICS LETTERS* **92**, 062105 (2008).
[78] H. W. Liu, T. Fujisawa, Y. Ono, H. Inokawa, A. Fujiwara, K. Takashina, and Y. Hirayama: Pauli-spin-blockade transport through a silicon double quantum dot, *Phy. Rev. B* **77**, 073310 (2008).
[79] H. W. Liu, T. Fujisawa, H. Inokawa, Y. Ono, A. Fujiwara, and Y. Hirayama: A gate-defined silicon quantum dot molecule, *APPLIED PHYSICS LETTERS* **92**, 222104 (2008).
[80] S. Yabuuchi, Y. Ono, M. Nagase, H. Kageshima, A. Fujiwara and E. Ohta: Ferromagnetism of Manganese-Silicide Nanoparticles in Silicon, *Japanese Journal of Applied Physics* **47**, 4487-4490 (2008).
[81] S. Yabuuchi, H. Kageshima, Y. Ono, M. Nagase, A. Fujiwara and E. Ohta: Origin of ferromagnetism of $MnSi_{1.7}$ nanoparticles, *Phy. Rev. B* **78**, 045307 (2008).
[82] H. Kageshima and A. Fujiwara: First-principles study on inversion layer properties of double-gate

atomically thin silicon channels, *APPLIED PHYSICS LETTERS* **93**, 043516 (2008).
[83] N. M. Zimmerman, W. H. Huber, B. Simonds, E. Hourdakis, A. Fujiwara, Y.Ono, Y. Takahashi, H. Inokawa, M. Furlan, and M. W. Keller: Why the long-term charge offset drift in Si single-electron tunneling transistors is much smaller (better) than in metal-based ones: Two-level fluctuator stability, *Journal of Applied Physics* **104**, 033710 (2008)
[84] K. Nishiguchi, C. Koechlin, Y. Ono, A. Fujiwara, H. Inokawa, and H. Yamaguchi: Single-electron-resolution electrometer based on field-effect transistor, *Japanese Journal of Applied Physics*, Vol. 47, pp. 8305–8310(2008).
[85] S. Miyamoto, K. Nishiguchi, Y. Ono, K M. Itoh, and A. Fujiwara: Escape dynamics of a few electrons in a single-electron ratchet using silicon nanowire metal-oxide-semiconductor field-effect transistor, *APPLIED PHYSICS LETTERS* **93**, 222103 (2008).
[86] K. Nishiguchi and A. Fujiwara: Single-electron counting statistics and its circuit application in nanoscale field-effect transistors at room temperature, Nanotechnology **20** 175201 (2009).
[87] K. Nishiguchi, N. Clement, T. Yamaguchi, and A. Fujiwara: Si nanowire ion-sensitive field-effect transistors with a shared floating gate, *APPLIED PHYSICS LETTERS* **94,** 163106 (2009).
[88] Mahboob, K. Nishiguchi, A. Fujiwara, and H. Yamaguchi: Room temperature piezoelectric displacement detection via a silicon field effect transistor, *APPLIED PHYSICS LETTERS* **95**, 233102 (2009).
[89] T. Kaizawa, M. Jo, M. Arita, A. Fujiwara, K. Yamazaki, Y. Ono, H. Inokawa, Y. Takahashi and J.-B. Choi: Full adder operation based on Si nanodot array device with multiple inputs and outputs, International Journal of Nanotechonology and Molecular Computation, **1**(2), 58-69 (2009).
[90] Y. Niida, K. Takashina, A. Fujiwara, T. Fujisawa, and Y. Hirayama: Spin splitting of upper electron subbands in a SiO2/Si(100)/SiO2 quantum well with in-plane magnetic field, *APPLIED PHYSICS LETTERS* **94**, 142101 (2009).
[91] K. Takashina, K. Nishiguchi, Y. Ono, A. Fujiwara, T. Fujisawa, Y. Hirayama, and K. Muraki: Electrons and holes in a 40 nm thick silicon slab at cryogenic temperatures, *APPLIED PHYSICS LETTERS* **94,** 142104 (2009).
[92] M. A. H. Khalafalla, Y. Ono, K. Nishiguchi, and A. Fujiwara: Horizontal position analysis of single acceptors in Si nanoscale field-effect transistors, *APPLIED PHYSICS LETTERS* **94,** 223501 (2009).
[93] Negative Magnetoresitance of a silicon 2DEG under in-plane magnetic field due to spin-splitting of upper subbands, K. Takashina, Y.Niida, V. Renard, A. Fujiwara and T. Fujisawa, and Y. Hirayama, International Journal of Modern Physics B (IJMPB), **23** pp. 2938-2942 (2009).
[94] T. Kaizawa, M. Arita, A. Fujiwara, K. Yamazaki, Y. Ono, H. Inokawa, Y. Takahashi and J.-B. Choi: Single-electron device with Si nanodot array and multiple input gates, IEEE Transactions on nanotechnology, **8**(4), 535-541(2009).
[95] M.Jo, T.Kaizawa, M.Arita, A.Fujiwara, Y.Ono, Hi.Inokawa, J.-B.Choi and Y.Takahashi: Fabrication of double-dot single-electron transistor in silicon nanowire, Thin Solid Films, 518, S186-S189 (2010).
[96] S. Miyamoto, K. Nishiguchi, Y. Ono, K. M. Itoh, and A. Fujiwara: Resonant escape over an oscillating barrier in a single-electron ratchet transfer, Phys. Rev. B **82**, 033303 (2010).
[97] J. Noborisaka, K. Nishiguchi, H. Kageshima, Y. Ono, and A Fujiwara: Tunneling spectroscopy of electron subbands in thin silicon-on-insulator metal-oxide-semiconductor field-effect transistors, Appl. Phys. Lett. **96**, 112102 (2010).
[98] H. Kageshima and A. Fujiwara: Dielectric constants of atomically thin silicon channels with double gate, Appl. Phys. Lett. **96**, 193102 (2010).
[99] I. Mahboob, E. Flurin, K. Nishiguchi, A. Fujiwara, and H. Yamaguchi: Enhanced force sensitivity and noise squeezing in an electromechanical resonator coupled to a nano-transistor, Appl. Phys. Lett. **97**, 253105 (2010).
[100] N. Clément, K. Nishiguchi, A. Fujiwara and D. Vuillaume: One-by-one trap activation in silicon nanowire transistors, Nature Communications 1 DOI:10.1038/ncomms1092 (2010).
[101] K. Takashina, M. Nagase, K. Nishiguchi, Y. Ono, H. Omi, A. Fujiwara, T. Fujisawa, and K.

Muraki: Separately contacted monocrystalline silicon double-layer structure with an amorphous silicon dioxide barrier made by wafer bonding, Semiconductor Science and Technology **25**, 125001 (2010)

[102] N. Clément, K. Nishiguchi, J. F. Dufreche, D. Guerin, A. Fujiwara, and D. Vuillaume: A silicon nanowire ion-sensitive field-effect transistor with elementary charge sensitivity, Appl. Phys. Lett. **98**, 014104 (2011).

[103] J. Noborisaka, K. Nishiguchi, Y. Ono, H. Kageshima, and A. Fujiwara: Strong Stark effect in electroluminescence from phosphorous-doped silicon-on-insulator metal-oxide-semiconductor field-effect transistors, Appl. Phys. Lett. **98**, 033503 (2011).

[104] N. Clement, K. Nishiguchi, A. Fujiwara, and D. Vuillaume: Evaluation of a Gate Capacitance in the Sub-aF Range for a Chemical Field-Effect Transistor With a Si Nanowire Channel, IEEE Trans. Nanotechnology **10**, 1172 (2011).

[105] K. Takashina, Y. Niida, V. T. Renard, A. Fujiwara, T. Fujisawa, K. Muraki, and Y.Hirayama: Impact of Valley Polarization on the Resistivity in Two Dimensions, Phys. Rev. Lett. **106**, 196403 (2011).

[106] K. Nishiguchi, Y. Ono and A. Fujiwara: Single-electron counting statistics of shot noise in nanowire Si metal-oxide-semiconductor field-effect transistor, Appl. Phys. Lett. **98**, 193502 (2011).

[107] I. Mahboob, E. Flurin, K. Nishiguchi, A. Fujiwara, and H. Yamaguchi: Nature Communications 2, 198 doi:10.1038/ncomms1201 (2011).

[108] Y. Takahashi, M.Jo, T.Kaizawa, Y. Kato, M.Arita, A.Fujiwara, Y.Ono, Hi.Inokawa, and J.-B.Choi: Si Nanodot Device Fabricated by Thermal Oxidation and Their Applications, Key Engineering Materials 479 pp.175-183 (2011)

[109] G. Yamahata, K. Nishiguchi, and A. Fujiwara: Accuracy evaluation of single-electron shuttle transfer in Si nanowire metal-oxide-semiconductor field-effect transistors, Appl. Phys. Lett. **98**, 222104 (2011).

[110] N. Clement, G. Patriarche, K. Smaali, F. Vaurette, K. Nishiguchi, D. Troadec, A. Fujiwara, D. Vuillaume: Large Array of Sub-10-nm Single-Grain Au Nanodots for use in Nanotechnology, Small, DOI: 10.1002/smll.201100915 (2011).

[111] K. Nishiguchi and A. Fujiwara: Single-Electron Stochastic Resonance Using Si Nanowire Transistors, Jpn. J. Appl. Phys. **50**, 06GF04 (2011).

[112] I. Mahboob, Q. Wilmart, K. Nishiguchi, A. Fujiwara, and H. Yamaguchi: Wide-band idler generation in a GaAs electromechanical resonator, Phys. Rev. B, **84**, 113411 (2011).

[113] H. Sumikura, K. Nishiguchi, Y. Ono, A. Fujiwara, and M. Notomi: Bound exciton photoluminescence from ion-implanted phosphorus in thin silicon layers, Optics Express **19**, No. 25, pp. 25255-25262 (2011).

[114] H. Kageshima and A. Fujiwara: AIP Conf. Proc. (Physics of Semiconductors) **1399**, 1997 (2011).

[115] Y. Ono, Y. Miyazaki, S. Yabuuchi, H. Kageshima, M. Nagase, A. Fujiwara, and E. Ohta :Significance of the interface regarding magnetic properties of manganese nanosilicide in silicon, Thin Solid Films **519** 8505-8508 (2011).

[116] T. Goto, H. Inokawa, Y. Ono, A. Fujiwara and K. Torimitsu: Jpn. J. Appl. Phys. **50** pp. 071603-071603-6 (2011).

[117] M. A. H. Khalafalla, Y. Ono, G. P. Lansbergen, and A. Fujiwara: Low temperature carrier transport in p-channel silicon-on-insulator transistors doped with indium, J. Appl. Phys. **110** 014512 (2011);

[118] S. Horiguchi and A. Fujiwara: Fluctuation of Average Position of Electrons in Coulomb Island in Si Single-Electron Transistor, *Thin Solid Films*, 520 pp. 3349-3353 (2012).

[119] G. Lansbergen, Y. Ono and *A. Fujiwara*: Donor based single electron pumps with tunable donor binding energy, Nano Lett. **12** 763−768 (2012).

[120] T. Thorbeck, A. Fujiwara, and Neil. Zimmerman, Simulating Capacitances to Silicon Quantum Dots: Breakdown of the Parallel Plate Capacitor Model, IEEE Transactions on Nanotechnology 11

975 (2012).
[121] K. Nishiguchi and A. Fujiwara: Nanowire Metal–Oxide–Semiconductor Field-Effect Transistors with Small Subthreshold Swing Driven by Body-Bias Effect, Appl. Phys. Express, vol. 5, p. 085002 (2012).
[122] I. Mahboob, Q. Wilmart, K. Nishiguchi, A. Fujiwara, and H. Yamaguchi: Tuneable electromechanical comb generation, Appl. Phys. Lett. **100**, 113109 (2012).
[123] H. Kageshima and A. Fujiwara: First-principles study of nonclassical effects in silicon-based nanocapacitors, Phys. Rev. B **85**, 205304-1-6 (2012).
[124] K. Nishiguchi and A. Fujiwara: Detecting signals buried in noise via nanowire transistors using stochastic resonance, Appl. Phys. Lett. **101**, 193108 (2012).
[125] Y. Niida, K. Takashina, Y. Ono, A. Fujiwara and Y. Hiryama: Electron and hole mobilities at a Si/SiO2 interface with giant valley splitting, Appl. Phys. Lett. **102**, 191603 (2013).
[126] K. Takashina, Y. Niida, V. T. Renard, B. A. Piot, D. S. D. Tregurtha, A. Fujiwara, and Y. Hirayama, Phys. Rev. B **88**, 201301(R) (2013).
[127] V. T. Renard, I. Duchemin, Y. Niida, A. Fujiwara, Y. Hirayama and K. Takashina, Metallic behaviour in SOI quantum wells with strong intervalley scattering, Scientific reports | 3 : 2011 | DOI: 10.1038/srep02011 (2013).
[128] N. Clément, K. Nishiguchi, J. F. Dufreche, D. Guerin, A. Fujiwara, and D. Vuillaume, Water Electrolysis and Energy Harvesting with Zero-Dimensional Ion-Sensitive Field-Effect Transistors, Nano Lett. **13**, 3903−3908 (2013).
[129] I. Mahboob, V. Nier, K. Nishiguchi, A. Fujiwara, and H. Yamaguchi, Multi-mode parametric coupling in an electromechanical resonator, Appl. Phys. Lett. **103**, 153105 (2013).
[130] S. Sasaki, K. Tateno, G. Zhang, H. Suominen, Y. Harada, S. Saito, A. Fujiwara, T. Sogawa, and K. Muraki, Appl. Phys. Lett. **103**, 213502 (2013).
[131] I. Mahboob, K. Nishiguchi, A. Fujiwara, and H. Yamaguchi, Phonon Lasing in an Electromechanical Resonator , Phys. Rev. Lett. **110**, 127202 (2013).
[132] K. Nishiguchi, H. Yamaguchi, A. Fujiwara, H. S. J. van der Zant, and G. A. Steele, Wide-bandwidth charge sensitivity with a radio-frequency field-effect transistor , Appl. Phys. Lett. **103**, 143102 (2013).
[133] R. Sivakumarasamy, K. Nishiguchi, A. Fujiwara, D. Vuillaume and N. Clement, , A Simple and Inexpensive Technique for PDMS/Silicon chip Alignment with sub-μm Precision, Anal. Methods, **6**, 97-101 (2014).
[134] G. Yamahata, K. Nishiguchi, and A. Fujiwara: Accuracy evaluation and mechanism crossover of single-electron transfer in Si tunable-barrier turnstiles Phys. Rev. B **89**, 165302 (2014)
[135] I. Mahboob, M. Mounaix, K. Nishiguchi, A. Fujiwara, and H. Yamaguchi: A multimode electromechanical parametric resonator array, Scientific Reports **4**, 4448 (2014).
[136] K. Nishiguchi, Y. Ono, and A. Fujiwara: Single-electron thermal noise, Nanotechnology **25**, 275201 (2014).
[137] G. Yamahata, K. Nishiguchi, and A. Fujiwara, Gigahertz single-trap electron pumps in silicon, Nat. Commun. **5**, 5038 (2014).
[138] J. Noborisaka, K. Nishiguchi, and A. Fujiwara: Electric tuning of direct-indirect optical transitions in silicon, Scientific Reports **4**, 6950 (2014).
[139] A.Fujiwara, K. Nishiguchi, and G. Yamahata, Silicon nanowire MOSFETs for diverse applications: A review, Proceedings of 2014 IEEE International Nanoelectronics Conference (INEC) (DOI: 10.1109/INEC.2014.7460452).
[140] G. Yamahata, T. Karasawa, and A. Fujiwara, Gigahertz single-hole transfer in Si tunable-barrier pumps, Appl. Phys. Lett. **106**, 023112 (2015).
[141] S. Sasaki, K. Tateno, G.. Zhang, Y. Harada, S. Saito, A. Fujiwara, T. Sogawa and K. Muraki: Self-aligned gate-all-around InAs/InP core–shell nanowire field-effect transistors, Jpn. J. Appl. Phys. **54**, 04DN04 (2015).

[142] T. Uchida, M. Arita, A. Fujiwara, and Y. Takahashi, Coupling capacitance between double quantum dots tunable by the number of electrons in Si quantum dots, J. Appl. Phys. **117**, 084316 (2015).
[143] I. Mahboob, N. Perrissin, K. Nishiguchi, D. Hatanaka, Y. Okazaki, A. Fujiwara, and H. Yamaguchi: Dispersive and dissipative coupling in a micromechanical resonator embedded with a nanomechanical resonator, Nano letters **15**, 2312-2317 (2015).
[144] M. Hori, M. Uematsu, A. Fujiwara, and Y. Ono: Electrical activation and electron spin resonance measurements of arsenic implanted in silicon, Appl. Phys. Lett. **106**, 142105 (2015).
[145] P. A. Carles, K. Nishiguchi and A. Fujiwara: Deviation from the law of energy equipartition in a small dynamic-random-access memory, Jpn. J. Appl. Phys. **54**, 06FG03 (2015).
[146] V. T. Renard, B. A. Piot, X. Waintal, G. Fleury, D. Cooper, Y. Niida, D. Tregurtha, A. Fujiwara, Y. Hirayama, and K. Takashina: Valley polarization assisted spin polarization in two dimensions, Nat. Commun. **6**, 7230 (2015).
[147] K. Nishiguchi, A. Castellanos-Gomez, H. Yamaguchi, A. Fujiwara, H. S. J. van der Zant, G. A. Steele: Observing the semiconducting band-gap alignment of MoS2 layers of different atomic thicknesses using a MoS2/SiO2/Si heterojunction tunnel diode, Appl. Phys. Lett. **107**, 053101 (2015).
[148] K. Chida, K. Nishiguchi, G. Yamahata, H. Tanaka and A. Fujiwara: Thermal-noise suppression in nano-scale Si field-effect transistors by feedback control based on single-electron detection, Appl. Phys. Lett. **107**, 073110 (2015).
[149] T. Hayashi, T. Take, H. Nakano, A. Fujiwara, T. Sekitani, and T. Someya: Study of Randomly Distributed Charge Traps by Measuring Frequency- and Time-Dependence of a DNTT-Based MIS Capacitor, Journal of Display Technology 11 (7) 604-609 (2015).
[150] T. Uchida, M. Jo, A. Tsurumaki-Fukuchi, M. Arita, A. Fujiwara, and Y. Takahashi: Fabrication and evaluation of series-triple quantum dots by thermal oxidation of silicon nanowire, AIP Advances **5** (11), 117144 (2015).
[151] M. Jo, T. Uchida, A. Tsurumaki-Fukuchi, M. Arita, A Fujiwara, Y. Ono, K. Nishiguchi, H. Inokawa, and Y. Takahashi: Fabrication and single-electron-transfer operation of a triple-dot single-electron transistor, J. Appl. Phys. **118** (21), 214305 (2015).
[152] G. Yamahata, S. P. Giblin, M. Kataoka, and T. Karasawa, and A. Fujiwara, Gigahertz single-electron pumping in silicon with an accuracy better than 9.2 parts in 10^7, Appl. Phys. Lett. **109**, 013101 (2016).
[153] M. Villiers, I. Mahboob, K. Nishiguchi, D. Hatanaka, A. Fujiwara, and H. Yamaguchi: An electromechanical displacement transducer, Appl. Phys. Express **9**, 086701 (2016).
[154] I. Mahboob, R. Duppy, K. Nishiguchi, A. Fujiwara, and H. Yamaguchi: Hopf and period-doubling bifurcations in an electromechanical resonator, Appl. Phys. Lett. **109**, 073101 (2016).
[155] K. Nishiguchi, D. Yoshizumi, Y. Sekine, K .Furukawa, A. Fujiwara, and M. Nagase: Planar cold cathode based on a multilayer-graphene/SiO2/Si heterodevice, Appl. Phys. Express **9**, 105101 (2016).
[156] T. Uchida, M. Jo, A. Tsurumaki-Fukuchi, M. Arita, A. Fujiwara, and Y. Takahashi: Capacitance evaluation of compact silicon triple quantum dots by simultaneous gate voltage sweeping, J. Appl. Phys. **120**, 234502 (2016).
[157] T. Watanabe, M. Hori, T. Tsuchiya, A. Fujiwara, and Y. Ono: Time-domain charge pumping on silicon-on-insulator MOS devices, Jpn. J. Appl. Phys. **56**, 011303 (2017).
[158] Y. Ono, M. Hori, G. P. Lansbergen, and A. Fujiwara, Manipulation of single charges using dopant atoms in silicon -Interplay with intervalley phonon emission-, Recent Global Research and Education: Technological Challenges, Volume 519 of the series Advances in Intelligent Systems and Computing, 137-141 (2017).
[159] S. Punniyakoti, R. Sivakumarasamy, F. Vaurette, P. Joseph, K. Nishiguchi, A. Fujiwara, and N. Clement, Hydrogen Silsesquioxane-based Nanofluidics, Advanced Materials Interfaces **4**, 1601155 (2017).
[160] G. Yamahata, S. P. Giblin, M. Kataoka, and T. Karasawa, and A. Fujiwara, High-accuracy

current generation in the nanoampere regime from a silicon single-trap electron pump, Scientific Reports **7**, 45137 (2017).

[161] I. Mahboob, M. Villiers, K. Nishiguchi, D. Hatanaka, A. Fujiwara, and H. Yamaguchi: A correlated electromechanical system, New Journal of Physics **19**, 033026 (2017).

[162] K Chida, S Desai, K Nishiguchi, and A Fujiwara, Power generator driven by Maxwell's demon, Nat. Commun. **8**, 15310 (2017).

[163] J. Trasobares, J. Rech, T. Jonckheere, T. Martin, O. Alévêque, E. Levillain, V. Diez-Cabanes, Y. Olivier, J. Cornil, J. P. Nys, R, Sivakumarasamy, K Smaali, P. Leclere, A. Fujiwara, D. Théron, D. Vuillaume, and N. Clément, Estimation of π–π Electronic Couplings from Current Measurements, Nano letters **17**, 3215-3224 (2017).

[164] N. Clement and A. Fujiwara, Molecular diodes: Breaking the Landauer limit, Nat. Nanotech. **12**, 725 (2017).

[165] Y. Takahashi, T. Uchida, A. Tsurumaki-Fukuchi, M. Arita, and A. Fujiwara, Evaluation of Coupled Triple Quantum Dots with Compact Device Structure, ECS Transactions **80**, 173-180 (2017).

[166] R. Sivakumarasamy, R. Hartkamp, B. Siboulet, J.-F. Dufreche, K. Nishiguchi, A. Fujiwara, and N. Clément, Selective-layer-free Blood Ionogram based on Ion-specific Interactions with a Nanotransistor, Nat. Mater. (accepted).

[167] T. Hayashi1, A. Naka, M. Hiroki, T. Yokota, T. Someya, and A. Fujiwara, Transport characteristics in Au/pentacene/Au diodes, Jpn. J. Appl. Phys. **57**, 03EH07 (2018).

[168] T. Hayashi, Y. Tokura, and A. Fujiwara, Field-dependent hopping conduction, Physica B **541**, 19 (2018).

[169] H. Firdaus, T. Watanabe, M. Hori, D. Moraru, Y. Takahashi, A. Fujiwara, and Y. Ono, Detection of single holes generated by impact ionization in silicon, Appl. Phys. Lett. **113**, 163103 (2018).

[170] R. Ohsugi, H. Omi, Y. Krockenberger, and A. Fujiwara, Spin splitting in EuO(111)/Si(111) spin-filter tunnel junctions with atomically sharp interface, Jpn. J. Appl. Phys. **57**, 110304 (2018).

[171] H. Firdaus, T. Watanabe, M. Hori, D. Moraru, Y. Takahashi, A. Fujiwara, and Y. Ono, Electron aspirator using electron–electron scattering in nanoscale silicon, Nature Communications **9**, 4813 (2018)

[172] Y. Takahashi, M. Shinohara, M. Arita, A. Tsurumaki-Fukuchi, and A. Fujiwara, Y. Ono, K. Nishiguchi, and H. Inokawa, Characteristics of Si Single-Electron Transistor under Illumination, ECS Transactions 92 (4), 47-56 (2019).

[173] S. Giblin, A. Fujiwara, G. Yamahata, M. H. Bae, N. Kim, A. Rossi, M. Möttönen, and M. Kataoka, Evidence for universality of tunable-barrier electron pumps, Metrologia **56**, 044004 (2019).

[174] N. Johnson, G. Yamahata, and A. Fujiwara, Measurement of the curvature and height of the potential barrier for a dynamic quantum dot, Appl. Phys. Lett. **115**, 162103 (2019).

[175] G. Yamahata, S. Ryu, N. Johnson, H-S. Sim, A. Fujiwara, and M. Kataoka, Picosecond coherent electron motion in a silicon single-electron source, Nature Nanotechnology **14**, 1019–1023 (2019).

[176] S. P. Giblin, E. Mykkänen, A. Kemppinen, P. Immonen, A. J. Manninen, M. Jenei, M. Möttönen, G. Yamahata, A. Fujiwara and M. Kataoka, Realisation of a quantum current standard at liquid helium temperature with sub-ppm reproducibility, Metrologia doi.org/10.1088/1681-7575/ab72e0 (2020).

Invited Talks:

[1] A. Fujiwara, Silicon nanodevices for metrology and sensor applications, IEEE Nanotechnology Materials and Devices Conference (IEEE NMDC2019) (Oct.. 27-30, 2019, Stockholm, Sweden)

[2] A. Fujiwara, Ultimate electronics with silicon nanowire MOSFETs, Workshop on Innovative Nanoscale Devices and Systems (WINDS) (Nov. 25-30, 2018, Hawaii, USA)

[3] A. Fujiwara, G. Yamahata, K. Chida, and K. Nishiguchi, Tunable-barrier electron pump for quantum current standards and information-to-energy converters, China-Japan International Workshop on Quantum Technologies (QTech2018) (Aug 23-24, 2018, Hefei, China).

[4] A. Fujiwara, Ultimate Electronics with Control of Single Electrons, 7th Summer School on Semiconductor/Superconducting Quantum Coherence Effect and Quantum Information (August 27-29, 2017, Shuzenji, Japan).

[5] A. Fujiwara, K. Nishiguchi, G. Yamahata, and K. Chida, Ultimate electronics with control of single electrons, EM-NANO2017 (June 18-21, 2017, Fukui, Japan).

[6] A. Fujiwara, K. Nishiguchi, G. Yamahata, and K. Chida, Ultimate Single Electronics with Silicon Nanowire MOSFETs, 2017 Silicon Nanoelectronics Workshop (June 4-5, 2017, Kyoto, Japan).

[7] A. Fujiwara, G. Yamahata, K. Nishiguchi, S. P. Giblin, and M. Kataoka, Gigahertz single-electron pump for quantum current standard, 33rd ICPS (Beijing, 31 July- 5 August, 2016)

[8] A. Fujiwara, G. Yamahata, and K. Nishiguchi, Gigahertz Single-Electron Pump towards a Representation of the New Ampere, 2015 SSDM (Sapporo, 27-30 September, 2015).

[9] A. Fujiwara, G. Yamahata, J. Noborisaka, and K. Nishiguchi, Nanoscale Silicon MOSFET for Metrology and Valleytronics Applications, 2015 UK-Japan Silicon Nanoelectronics and Nanotechnology Symposium (Southampton, 9-10 July, 2015).

[10] Plenary talk: A. Fujiwara, Silicon single-electron devices for ultimate electronics, EURAMET DC & Quantum Metrology Meeting (Bern, 27-29 May 2015)

[11] A. Fujiwara, K. Nishiguchi, G. Yamahata, Silicon nanowire MOSFETs for diverse applications, The 6th IEEE International Nanoelectronics Conference 2014 (INEC2014) (Sapporo, July 28-31, 2014)

[12] Plenary talk: A. Fujiwara, Silicon-based nanodevices for diverse applications, 39th Int. Conf. on Micro and Nano Engineering (MNE) (London, UK, Sept. 16-19 2013).

[13] A. Fujiwara, G. Yamahata, K. Nishiguchi, G. P. Lansbergen and Y. Ono: Silicon Single-Electron Transfer Devices: Ultimate Control of Electric Charge, 2012 Silicon Nanoelectronics Workshop (June 2012, Hawaii, USA).

[14] A. Fujiwara, K. Nishiguchi, and Y. Ono: Single electron transfer technology using Si nanowire MOSFETs, *2010 International Symposium on Atom-scale Silicon Hybrid Nanotechnologies for 'More-than-Moore' & 'Beyond CMOS' Era* (March 1 – 2, 2010, Southampton, UK), Program and Abstracts, pp. 19 – 20.)

[15] A. Fujiwara, K. Nishiguchi and Y. Ono: Single-electron devices based on silicon nanowire MOSFETs, Trends in Nanotechnology (TNT2009) p.39 (September 7-11, 2009,Barcelona)

[16] A. Fujiwara, K. Nishiguchi and Y. Ono: Silicon Nanowire MOSFETs and Their Application to Single-Electron Devices, International Conference on Nanoscience and Technology (ChinaNANO) 2009, p. 50-51 (September 1-3, 2009,Beijing)

[17] A. Fujiwara, K. Nishiguchi, Y. Ono, H. Inokawa, and Y. Takahashi: Silicon Single-Electron Devices and Their Applications, *2008 Tera-level NanoDevices (TND) Technical Forum* (Soul, 2008.10.17).

[18] A. Fujiwara and Y. Takahashi: Si nano-devices using an electron-hole system, *2nd International Conference on Semiconductor Quantum Dots (QD2002)* (2002.9).

[19] A. Fujiwara and Y. Takahashi: Si nano-devices using an electron-hole system, *Proceedings of 5th Europian Workshop on Low Temperature Electronics, (Journal de Physiqye IV,* **12**, No.Pr3), *Ed. F Balestra, (WOLTE-5)* pp. Pr3-85-Pr3-92 (2002.6).

[20] A. Fujiwara, K. Yamazaki, and Y. Takahashi: Silicon Single-electron CCD, *2001 Int. Micreprocess and Nanotechnology Conference (MNC)* pp. 278-279 (2001.10).

[21] A. Fujiwara, Y. Takahashi, K. Yamazaki, H. Namatsu, M. Nagase, K. Kurihara, and K. Murase Single-electron devices: recent attempts towards high performance and functionality, *1999 Int. Conf. Solid State Devices and Materials (SSDM)* pp. 248-249 (1999).

[22] A. Fujiwara, Y. Takahashi, K. Yamazaki, H. Namatsu, M. Nagase, K. Kurihara, and K. Murase: Silicon single-electron devices fabricated by pattern-dependent oxidation (PADOX), *Sweden-Japan Joint QNANO Workshop* (1998).

[23] A. Fujiwara, Y. Takahashi, K. Yamazaki, H. Namatsu, M. Nagase, K. Kurihara, and K. Murase: Silicon single-electron devices fabricated by pattern-dependent oxidation (PADOX), *International Symposium on Formation, Physics and Device Application of Quantum Dot Structures (QDS98)*, (1998).

International Conferences:

[1] Y. Takahashi, S. Horiguchi, A. Fujiwara, and K. Murase: Co-tunneling current in very small Si single-electron transistors, *Third International Symposium on New Phenomena in Mesoscopic Structures* (1995).

[2] Y. Takahashi, A. Fujiwara, H. Namatsu, K. Kurihara, K. Iwadate, M. Nagase, and K. Murase (Invited) : Silicon Single-Electron Transistors Operating up to Room Temperature, *1996 March Meeting of The American Physical Society* (1996).

[3] Y. Takahashi, M. Nagase, A. Fujiwara, H. Namatsu, K. Kurihara, K. Iwadate, and K. Murase (Invited): Silicon Single-Electron Transistors Operating at Very High Temperatures, *The International Conference on Quantum Devices and Circuits* (1996).

[4] K. Murase, Y. Takahashi, and A. Fujiwara (Invited) : Silicon single-electron transistor, *Adv. Res. Asynchronous Circuits and System Symp.* (1996).

[5] A. Fujiwara, Y. Takahashi, and K. Murase: Direct evidence of the first conduction-band electron in an asymmetric Si single-electron transistor, *The Electrochemical Society 1996 Fall Meeting* (1996).

[6] Y. Takahashi, A. Fujiwara, M. Nagase, H. Namatsu, K. Kurihara, and K. Murase (Invited) : Size dependence of the characteristics of silicon single-electron transistors, *The Scanning Microscopy 1997 Meeting* (1997).

[7] A. Fujiwara, Y. Takahashi, H. Namatsu, K. Kurihara, and K. Murase: Suppression of unintentional formation of parasitic Si islands on a Si single-electron transistors by the use of SiN masked oxidation, *1997 Int. Conf. Solid State Devices and Materials (SSDM)* (1997).

[8] M. Nagase, A. Fujiwara, K. Yamazaki, Y. Takahashi, K. Murase, and K. Kurihara: Si nanostructures formed by patteren-dependent oxidation, *MNE 97* (1997).

[9] A. Fujiwara, Y. Takahashi, K. Yamazaki, H. Namatsu, M. Nagase, K. Kurihara, and K. Murase: Silicon double-island single-electron device, *Technical Digest of International Electron Devices Meeting 1997 (IEDM)*, 938-940.

[10] A. Fujiwara, Y. Takahashi, K. Yamazaki, H. Namatsu, M. Nagase, K. Kurihara, and K. Murase (Invited) : Silicon single-electron devices fabricated by pattern-dependent oxidation (PADOX), *International Symposium on Formation, Physics and Device Application of Quantum Dot Structures (QDS98)*, (1998).

[11] A. Fujiwara, Y. Takahashi, K. Yamazaki, H. Namatsu, M. Nagase, K. Kurihara, and K. Murase (Invited) : Silicon single-electron devices fabricated by pattern-dependent oxidation (PADOX), *Sweden-Japan Joint QNANO Workshop* (1998).

[12] K. Yamazaki, A. Fujiwara, Y. Takahashi, H. Namatsu, and K. Kurihara: Sub-10-nm overlay accuracy in electron beam lithography for nanometer-scale device fabrication, *1998 Int. Symp. on Micro Nano*

Process Conference (MNC 98).

[13] Y. Takahashi, A. Fujiwara, K. Yamazaki, M. Nagase, H. Namatsu, K. Kurihara, and K. Murase (Invited) : Si single-electron devices, *Int. Symp. Quantum Optics and Mesoscopic Physics* p. 2 (1998).

[14] A. Fujiwara, Y. Takahashi, and K. Murase: Observation of single electron-hole recombination and photon pumped current in an asymmetric silicon single-electron transistor, *Int. Symp. Quantum Optics and Mesoscopic Physics* p. 26 (1998).

[15] Y. Takahashi, A. Fujiwara, K. Yamazaki, H. Namatsu, K. Kurihara, and K. Murase: A Si memory device composed of a 1D-MOSFET Switch and a Single-Electron-Transistor Detector, *1998 Int. Conf. Solid State Devices and Materials (SSDM)* pp. 176-177 (1998).

[16] Y. Takahashi, A. Fujiwara, K. Yamazaki, M. Nagase, H. Namatsu, K. Kurihara, and K. Murase (Invited) : Si single-electron devices, *NAIST Int. Symp.Nano- and Biotechnology for Future Devices* pp. 13-12 (1998).

[17] A. Fujiwara, Y. Takahashi, and K. Murase: asymmetric tunnel barrier in a Si single-electron transistor, *4th Int. Symp. New Phenomena in Mesoscopic Structure (NPMS'98)* pp. 230-232 (1998).

[18] Y. Takahashi, A. Fujiwara, K. Yamazaki, H. Namatsu, K. Kurihara, and K. Murase: A multi-gate single-electron transistor and its application to an exclusive-OR gate, *1998 International Electron Devices Meeting (IEDM)* Technical Digest pp. 127-130 (1998).

[19] A. Fujiwara, Y. Takahashi, K. Yamazaki, H. Namatsu, M. Nagase, K. Kurihara, and K. Murase (Invited) : Single-electron devices: recent attempts towards high performance and functionality, *1999 Int. Conf. Solid State Devices and Materials (SSDM)* pp. 248-249 (1999).

[20] Y. Takahashi, Y. Ono, A. Fujiwara, K. Yamazaki, M. Nagase, H. Namatsu, K. Kurihara, and M. Murase (Invited): Novel fabrication techniques for silicon single-electron devices, *1999 Int. Meeting of The Electrochemical Society (ECS)* Abstract No. 1863 (1999).

[21] Y. Takahashi, Y. Ono, A. Fujiwara, K. Yamazaki, M. Nagase, H. Namatsu, K. Kurihara, and M. Murase (Invited): Silicon single-electron devices, *Proceedings of Advanced Nanoelectronics: Devices, Materials, and Computing, 3rd SANKEN International Symposium,* pp. 4-10 (2000.3.).

[22] Y. Takahashi, A. Fujiwara, Y. Ono, and M. Murase (Invited): Silicon single-electron devices and their applications, *the 30th IEEE International Symposium on Multiple-Valued Logic*, (IEEE Computer Society) (2000.5.).

[23] Y. Takahashi, Y. Ono, A. Fujiwara, and M. Murase (Invited): Advanced technologies for Si-based single-electron tunneling devices, *International Symposium on Formation, Physics and Device Application of Quantum Dot Structures (QDS2000)*,, Collected Abstract pp. 2 (2000.9.).

[24] A. Fujiwara, and Y. Takahashi,: Silicon single-electron CCD, *2000 International Electron Devices Meeting (IEDM)* Technical Digest pp. 866-868 (2000.12).

[25] Y. Takahashi, A. Fujiwara, Y. Ono, S. Horiguchi, K. Shiraishi, M. Nagase, and K. Murase (Invited) : Silicon Single-Electron Devices, *International Conference on Experimental Implementation of Quantum Computation (IQC01),* Abstract pp. Th3-2 (2001.1).

[26] Y. Takahashi, A. Fujiwara, Y. Ono, S. Horiguchi, K. Shiraishi, M. Nagase, and K. Murase (Invited) : Silicon Single-Electron Transistor, *2001 March Meeting of The American Physical Society*, Bulletin pp.519 (2001.3).

[27] William H. Huber, Neil M. Zimmerman, A. Fujiwara, and Y. Takahashi: Excellent Charge Offset Stability in Silicon Single-Electron Transistors, *2001 March Meeting of The American Physical Society*, Bulletin pp.1119 (2001.3).

[28] Y. Takahashi, Y. Ono, and A. Fujiwara (Invited): Silicon Single-Electron Devices and Their Circuit Applications, *The Firsr Korea-U.S.-Japan Workshop on Nanostructures Science and Technology (1st WNST)*, Proceeings Session 4-4 (2001.4).

[29] A. Fujiwara,and Y. Takahashi: Detection of Elemental Charge in Si-wire SOI MOSFET by Single-Electron Floating-Body Effect, *2001 Silicon Nanoelectronics Workshop (SNW-01)*, Workshop Abstracts pp. 40-41 (2001.6).

[30] M. Nagase, S. Horiguchi, A. Fujiwara, Y. Ono, K. Yamazaki, H. Namatsu, and Y. Takahashi (Invited): Si single-electron devices formed by pattern-dependent oxidation, *8-th International Conference on Formation of Semiconductor Interfaces (ICFSI-8)*, (2001.6.).

[31] H. Inokawa, A. Fujiwara, and Y. Takahashi: A Multiple-Valued SRAM with Combined Single-Electron and MOS Transistors, *59th Annual Device Research Conference (DRC-01)* Conference Digest 129-130 (2001.6).

[32] M. Nagase, S. Horiguchi, A. Fujiwara, and Y. Takahashi: Three dimensional size evaluation of island in Si single-electron transistor, *2001 Int. Conf. Solid State Devices and Materials (SSDM)* pp. 436-437 (2001.9).

[33] H. Inokawa, A. Fujiwara, and Y. Takahashi: A Merged SET-MOSFET Logic for Interface and Multiple-valued Functions, *2001 Int. Conf. Solid State Devices and Materials (SSDM)* pp. 548-549 (2001.9).

[34] A. Fujiwara, K. Yamazaki, and Y. Takahashi: Single-electron Detection in Si-Wire Transistor at Room Temperature, *2001 Int. Conf. Solid State Devices and Materials (SSDM)* pp. 568-569 (2001.9).

[35] M. Nagase, S. Horiguchi, K. Shiraishi, A. Fujiwara, and Y. Takahashi (Invited): Single-electron devices formed by thermal oxidation, *International Symposium.on Materials Prosessing for Nanostructures Device,* (2001.9).

[36] H. Inokawa, A. Fujiwara, and Y. Takahashi (Invited): A Multiple-Valued Single-Electron SRAM by PADOX Process, *2001 6th Int. Conf. Solid-State and Integrated-Circuit Technology* pp. 205-208 (2001.10).

[37] A. Fujiwara, K. Yamazaki, and Y. Takahashi (Invited): Silicon Single-electron CCD, *2001 Int. Micreprocess and Nanotechnology Conference (MNC)* pp. 278-279 (2001.10).

[38] Y. Takahashi, Y. Ono, A. Fujiwara, and H. Inokawa, (Invited) : Silicon Single-Electron Devices, *7th International Symposium on Advanced Physical Fields (APF-7)* pp. 11-15 (2001.11).

[39] Y. Takahashi, Y. Ono, A. Fujiwara, and H. Inokawa, (Invited): Silicon Single-Electron Transistors and Single-Electron CCD, *The Fall 2001 Meeting of the Materials Research Society (MRS)* (2001.11).

[40] H. Inokawa, A. Fujiwara, and Y. Takahashi: A Multiple-Valued Logic with Merged Single-Electron and MOS Transistors, *2001 International Electron Devices Meeting (IEDM)* Technical Digest pp. 147-150 (2001.12).

[41] Y. Takahashi, Y. Ono, A. Fujiwara, and H. Inokawa (Invited): Silicon Single-Electron Transistors and Their Applications to Logic Circuits, *2002 Int. Meeting of The Electrochemical Society (ECS)* Abstract No. 629 (2002.5).

[42] N. M. Zimmerman, W.H. Huber, A. Fujiwara and Y. Takahashi: Excellent charge offset stability in Si-based set transistors**,** Conference on Precision Electromagnetic Measurements, 2002, *(CPEM02),* Conference Digest pp. 124-125 (2002.6).

[43] Shigeto Fukatsu, Tomonori Takahashi, Kohei M. Itoh, Masashi Uematsu, AkirA. Fujiwara, Hiroyuki Kageshima, Yasuo Takahashi, and Kenji Shiraishi: Self-Diffusion of Si in Thermally Grown Amorphous SiO_2, *2002 International Electron Materials Conference (EMC)* (2002.6).

[44] A. Fujiwara and Y. Takahashi (Invited): Si nano-devices using an electron-hole system, *Proceedings of 5th Europian Workshop on Low Temperature Electronics, (Journal de Physiqye IV,* **12**, No.Pr3), *Ed. F Balestra, (WOLTE-5)* pp. Pr3-85-Pr3-92 (2002.6).

[45] A. Fujiwara, S. Horiguchi, M. Nagase, and Y. Takahashi : Threshold Voltage of Si Single-Electron Transistor, *2002 Int. Conf. Solid State Devices and Materials (SSDM)* pp. 110-111 (2002.9).

[46] M. Nagase, S. Horiguchi, A. Fujiwara, and Y. Takahashi: Evaluation of lattice distortion with nanometer resolution in Si single-electron transistor, *2002 Int. Conf. Solid State Devices and Materials (SSDM)* pp. 552-553 (2002.9).

[47] Y. Takahashi, Y. Ono, A. Fujiwara, and H. Inokawa (Invited): Silicon single-electron devices for logic applications, *32th European Solid-State Device Research Conference (ESSDERC-2002)* Proceedings of 32nd ESSDERC, Eds. G. Baccarani, E. Gnani, and M. Rudan, pp.61-68 (2002.9).

[48] A. Fujiwara and Y. Takahashi (Invited): Si nano-devices using an electron-hole system, *2nd International Conference on Semiconductor Quantum Dots (QD2002)* (2002.9).

[49] Y. Takahashi, Y. Ono, A. Fujiwara, and H. Inokawa (Invited): Development of Si single-electron devices, *4th International Symposium on Nanostructures and Mesoscopic Systems (NanoMES-2003)* Abstract No. RP1 (2003.2).

[50] K. Nishiguchi, H. Inokawa, Y. Ono, A. Fujiwara, and Y. Takahashi: Automatic Control of the Oscillation Phase of a Single-Electron Transistor by a Memory Node with a Small MOSFET, *61th Annual Device Research Conference (DRC-03)* (2003.6).

[51] K. Takashina, Y. Hirayama, A. Fujiwara, and Y. Takahashi: A Silicon Bi-layer System, *The 15th International Conference on Electronic Properties of Two-Dimensional Systems (EP2DS 15)* p. 44 (2003.7).

[52] S. Horiguchi, A. Fujiwara, H. Inokawa, and Y. Takahashi: Analysis of Back-Gate Voltage Dependence of Threshold Voltage of Thin SOI MOSFET and Its Application to Si Single-Electron Transistor, *2003 Int. Conf. Solid State Devices and Materials (SSDM)* pp. 332-333 (2003.9).

[53] Y. Takahashi, A. Fujiwara, and S. Horiguchi (Invited): Silicon nano-wire and quantized conductance, *International Workshop on Smart Interconnects (IWSI) Co-organized with Dr. Rohrer's JSPS Award Workshop,* Abstract: pp. 16 (2003.11).

[54] K. Takashina, Y. Hirayama, A. Fujiwara, S. Horiguchi, and Y. Takahashi : Valley Spliting Control in SIMOX based SiO_2/Si/ SiO_2 Quantum Well, *International Symposium .on Functional Semiconductor NanoSystems (FSNS 2003)* p. 44 (2003.11).

[55] Y. Takahashi, Y. Ono, A. Fujiwara, K. Nishiguchi and H. Inokawa (Invited): Silicon Single-Electron Devices Operating with MOSFETs, *6th International Conference on New Phenomena in Mesoscopic Systems & 4th International Conference on Surfaces and Interfaces of Mesoscopic Devices, (NPMS-6 & SIMD-4),* Abstract p. 107 (2003.12).

[56] Y. Takahashi, Y. Ono, A. Fujiwara, and H. Inokawa (Invited): Silicon nano-devices and single-electron devices, *2003 International Semiconductor Device Research Symposium (ISDRS'03),* Symposium Proceedings pp. 448-449 (IEEE Catalog Number: 03EX741, 2003.12).

[57] A. Fujiwara, N. Zimmerman, Y. Ono, and Y. Takahashi: Single-electron turnstile using Si-wire charge-coupled devices, *2003 International Semiconductor Device Research Symposium (ISDRS'03),* Symposium Proceedings pp. 485-486 (IEEE Catalog Number: 03EX741, 2003.12).

[58] H. Inokawa, Y. Ono, A. Fujiwara, and Y. Takahashi (Invited): Single-Electron Devices fabricated by MOS Processes, *European Material Research Society 2004 Spring Meeting (E-MRS 2004 Spring Meeting,* Strasbourg, France – May 24-28, 2004).

[59] Y. Takahashi, Y. Ono, A. Fujiwara, K. Nishiguchi, and H. Inokawa (Invited): Fabrication and Application of Silicon Single-Electron Devices, Ultimate Lithography and Nanodevice Engineering Conference**,** Keynote in Industrial Day (Agelonde, France, 2004.5. 13-16).

[60] Y. Takahashi, Y. Ono, A. Fujiwara, K. Nishiguchi, and H. Inokawa, Fabrication and Application of Silicon Single-Electron Devices, Ultimate lithography and nanodevice engineering (LITHO200) (13-16 June, 2004 Agelonde-France).

[61] S. Horiguchi, A. Fujiwara, H. Inokawa, and Y. Takahashi (Invited): Electronic States in Si Single-Electron Transistors, *2004 Silicon Nanoelectronics Workshop (SNW-04)*, (Honolulu, Hawaii, USA, 2004.6).

[62] Neil M. Zimmerman, AkirA. Fujiwara, Stuart Martin, Yukinori Ono, and Yasuo Takahashi: Silicon-Based, Tunable-Barrier Single Charge Sources, *Conference on Precision Electromagnetic Measurements (CPEM 2004),* (London, UK, 2004.6.27-7.2).

[63] K. Takashina, Y. Hirayama, A. Fujiwara, and Y. Takahashi: Transport properties of Landau level coincidences in valley-tunable silicon, *The 16th International Conference on High Magnetic Fields in Semiconductor Physics (SemiMag 16)* (2004.8).

[64] Y. Ono, A. Fujiwara, H. Inokawa, and Y. Takahashi: Charge-state control of phosphorus donors in SOI MOSFET, *2004 Int. Conf. Solid State Devices and Materials (SSDM)* (Tokyo, 2004.9).

[65] Y. Takahashi, Y. Ono, A. Fujiwara, K. Nishiguchi, and H. Inokawa (Invited): Application of Silicon Single-Electron Devices, *First Annual Meeting on the Fusion of Biotechnology, Nanotechnology and Semiconductor Technology (FBNS)* (Kyoto, 2004.10).

[66] Y. Takahashi, Y. Ono, A. Fujiwara, and H. Inokawa (Invited): Silicon Single-Electron Devices and Their Applications, The 7th International Conference on Solid-State and Integrated-Circuit Technology (ICSICT), Proceedings pp. 624-629 (Beijing 北京, China, 2004.10. 18-21).

[67] Y. Takahashi, Y. Ono, A. Fujiwara, K. Nishiguchi, and H. Inokawa (Invited): Single-Electron Device applications using their special functionalities, *The 6th International Conference on Nano-molecular Electronics (ICNME-2004)* (Kobe, 2004.12).

[68] K. Nishiguchi, A. Fujiwara, Y. Ono, H. Inokawa, and Y. Takahashi: Room-temperature single-electron transfer and detection with silicon nanodevices, *2004 International Electron Devices Meeting (IEDM)* Technical Digest (San Francisco, 2004.12).

[69] N. M. Zimmerman, A. Fujiwara, Y. Ono, H. Inokawa, Y. Takahashi, and E. Hourdakis (Invited), The physics of Coulomb blockade in tunable barrier Si wires*„ International Conference on Nanoelectronics, Nanostructures, and Carrier Interaction (NNCI2005),* (Atsugi, Japan, 2005.1)

[70] Y. Ono, A. Fujiwara, Y. Takahashi, and H. Inokawa (Invited): Silicon single-electron pump and turnstile; Interplay with crystalline imperfection, *Material Research Society Spring Meeting (2005 MRS Spring meeting)*, (San Francisco, USA, 2005.3)

[71] Y. Takahashi, Y. Ono, A. Fujiwara, K. Nishiguchi, and H. Inokawa (Invited): Silicon-based single-electron devices, *Fourth International Conference on Silicon Epitaxy and Heterostructures* (ICSI-4)（Awaji Island, Japan, 2005.5）.

[72] K. Takashina, Y. Ono, A. Fujiwara, Y. Takahashi and Y. Hirayama (Invited): Control of valley and spatial subbands in double-gate SOI MOSFETs, *Asia-Pacific Workshop on Fundamental and Application of Advanced Semiconductor Devices (AWAD 2005)*, (Seoul, Korea, 2005.6)

[73] S. Koo, A. Fujiwara, C. A. Richter, E. M. Vogel, Q. Li, M. D. Edelstein, J. Han, and J. E. Bonevich: Transport properties of silicon nanowire field effect transistor test structures fabricated by top-down approaches, *2005 Silicon Nanoelectronics Workshop (SNW-05)*, (Kyoto, Japan, 2005.6).

[74] K. Takashina, Y. Ono, A. Fujiwara, Y. Takahashi, and Y. Hirayama: Intersubband scattering in double-gate MOSFETs, *2005 Silicon Nanoelectronics Workshop (SNW-05)*, (Kyoto, Japan, 2005.6).

[75] K. Nishiguchi, O. Crauste, H. Namatsu, S. Horiguchi, Y. Ono , A. Fujiwara, H. Inokawa, and Y. Takahashi: Back-gate effect on Coulomb blockade in SOI trench wires, *2005 Silicon Nanoelectronics Workshop (SNW-05)*, (Kyoto, Japan, 2005.6).

[76] Y. Ono, A. Fujiwara, Y. Takahashi, H. Inokawa (Invited): Single-Electron Manipulation: Interplay with Crystalline Imperfection *The 2nd International Symposium on Point Defect and Nonstoichiometry* (Kaohsiung TAIWAN , 2005.10)

[77] H. Inokawa, Y. Ono, A. Fujiwara, K. Nishiguchi, and Y. Takahashi (Invited): Single-Electron Devices and Circuits Based on MOS Processes, *2005 Tera-level NanoDevices (TND) Technical Forum* (Soul, 2005.10).

[78] Y. Ono, A. Fujiwara, Y. Takahashi, H. Inokawa (Invited): Single-Electron Transfer in Silicon, *Fourteenth International Workshop on The Physics of Semiconductor Devices WorkShop* (Delhi, India, 2005.12)

[79] K. Nishiguchi, A. Fujiwara, Y. Ono, H. Inokawa, and Y. Takahashi: Room-Temperature Operation of Data Processing Circuit Based on Single-Electron Transfer and Detection with Metal-Oxide-Semiconductor Field-Effect-Transistor Technology, *2006 Silicon Nanoelectronics Workshop (SNW-06)*, (Honolulu, Hawaii, USA, 2006.6).

[80] K. Nishiguchi, A. Fujiwara, Y. Ono, H. Inokawa, and Y. Takahashi: Long-retention gain-cell DRAM using undoped SOI MOSFET, *2006 Silicon Nanoelectronics Workshop (SNW-06)*, (Honolulu, Hawaii, USA, 2006.6).

[81] K. Takashina, M. Brun, T. Ota, D. Maude, A. Fujiwara, Y. Ono, H. Inokawa, Y. Hirayama: Resistance Ridges Along Filling Factor v=1 in SiO2/Si/SiO2, *28th International Conference on the Physics of Semiconducors (ICPS)* (Vienna, 2006.7).

[82] W. C .Zhang, K. Nishiguchi, Y. Ono, A. Fujiwara, H. Yamaguchi, H. Inokawa, Y. Takahashi, and N. J. Wu: Transfer and Detection of Single Electrons using Metal-Oxide-Semiconductor Field-Effect-Transistors, *2006 Asia-Pacific Workshop on Fundamental and Application of Advanced Semiconductor Devices*, (Sendai, Japan, 2006. 7)

[83] H. Inokawa, K. Nishiguchi, A. Fujiwara, Y. Ono, Y. Takahashi, and H. Yamaguchi: Metal-Oxide-Semiconductor-Based Single-Electronics, The 5-th annual International Conference on Global Research and Education (inter-Academia) (Iasi, Romania, 2006. 9)

[84] K. Nishiguchi, Y. Ono, A. Fujiwara, H. Yamaguchi, H. Inokawa, and Y. Takahashi: Infrared detection with silicon nano transistors, *2004 Int. Conf. Solid State Devices and Materials (SSDM)* (Yokohama, Japan, 2006.9).

[85] H. W. Liu,T. Fujisawa,Y. Ono, A. Fujiwara, H. Inokawa, and Y. Hirayama, Resonant Tunneling Transport through Silicon Double Quantum Dot, ICNT(International Conference of Nanoscience and Technology, (Basel, 2006 July 30-August 4).

[86] T. Kaizawa, M. Arita, A. Fujiwara, K. Yamazaki1, Y. Ono, H. Inokawa, and Yasuo Takahashi: Single-electron device using Si nanodot array and multi-input gates, *8th International Conference on Solid-State and Integrated-Circuit Technology* (ICSICT2006, Oct. 23-26, 2006, Shanghai, China), Technical program, D3-7.

[87] H. Inokawa , K. Nishiguchi, Y. Ono, A. Fujiwara, and Y. Takahashi:(invited)
Recent progress in integration of silicon single-electron devices.
The 4th International Workshop on Ubiquitous Knowledge Network Environment (March 5 - 7, 2007, Sapporo, Japan) Abstract, p. 15.

[88] Y. Ono, J.-F. Morizur, K. Nishiguchi, K. Takashina, H. Yamaguchi, A. Fujiwara, K. Hiratsuka, S. Horiguchi, H. Inokawa, and Y. Takahashi: Hopping conduction in buried-channel SOI MOSFETs with shallow impurities, *International Conference on Nanoelectronics, Nanostructures, and Carrier Interaction* (NNCI2007, February 20 - 23, 2007, Atsugi, Kanagawa). Program & Abstract p. 161.

[89] K. Takashina, V. Renard, Y. Niida, A. Fujiwara, Y. Hirayama, T. Fujisawa: Temperature Dependent Resistivity of a Two-Dimensional Electron System in a SiO2/Si/SiO2 Quantum Well, *International Conference on Nanoelectronics, Nanostructures, and Carrier Interaction* (NNCI2007, February 20 - 23, 2007, Atsugi, Kanagawa).

[90] H.W. Liu, T. Fujisawa, Y. Ono, A. Fujiwara, H. Inokawa, K. Takashina, and Y. Hirayama: Electron transport through single and double quantum dots in silicon MOS structures *2007 Frontiers in Nanoscale Science and Technology Workshop* (FNST2007, March 29 - 31, 2007, University of Tokyo)

[91] T. Kaizawa, M. Arita, A. Fujiwara, K. Yamazaki1, Y. Ono, H. Inokawa, Y. Takahashi, and J.-B. Choi: Single-electron device using Si nanodot array and multi-input gates, *2007 Silicon Nanoelectronics Workshop* (SNW-2007, June 10-11, Kyoto), Workshop Abstract, pp. 171- 172.

[92] Y. Ono, M. Khalafalla, K. Nishiguchi, K. Takashina, H. Yamaguchi, A. Fujiwara, S. Horiguchi, H. Inokawa, and Y. Takahashi: Dopant-mediated charge transport in boron-doped nano MOSFETs, *2007 Silicon Nanoelectronics Workshop* (SNW-2007, June 10-11, Kyoto), Workshop Abstract, pp. 159- 160.

[93] K. Nishiguchi, Y. Ono, A. Fujiwara, H. Inokawa, and Y. Takahashi(invited): Room-temperature-operating single-electron devices using silicon nanowire MOSFET, 2007 Asia-Pacific Workshop on Fundamentals and Applicaition Advanced Semiconductor Devices (AWAD, June, Gyeongju, 2007).

[94] S. Yabuuchi, H. Kageshima, Y. Ono, M. Nagase, A. Fujiwara, E. Ohta: Theoretical study on magnetic properties of manganese nanosilicide in silicon *17th International Vacuum Congress* (IVC-17, joint with ICSS-13 and ICN+T2007, July 2 - 6, 2007, Stockholm, Sweden), Final program, p. 55, NSP1 - 118.

[95] H. Kageshima and A. Fujiwara: First-principles study on capacitor made of silicon (111) nano-slabs:*17th International Vacuum Congress* (IVC-17, joint with ICSS-13 and ICN+T2007, July 2 - 6, 2007, Stockholm, Sweden).

[96] A. Fujiwara, K. Nishiguchi, and Y. Ono:Single-electron ratchet using silicon nanowie MOSFET *International Conference on Electronic Properties of Two-dimensional Systems and Modulated Semiconductor Structures* (EP2DS 17 + 13 MSS, 5-20 July, 2007, Genova Magazzini del Cotone, Italy),MSS13 Abstract Book, pp. 215 – 217.

[97] H. Inokawa, A. Fujiwara, K. Nishiguchi and Y. Ono:Capacitive Parameter Extraction for Nanometer-Size Field-Effect Transistors, *2007 International Conference on Solid State Devices and Materials* (SSDM-2007, September 18-21, Tsukuba).

[98] M. Khalafalla, Y. Ono, K. Nishiguchi, and A. Fujiwara: Identification of Single and Coupled Acceptors in Silicon Nano Field-Effect Transistors, *2007 International Conference on Solid State Devices and Materials* (SSDM-2007, September 18-21, Tsukuba).

[99] A. Fujiwara, K. Nishiguchi, and Y. Ono: Nanoampere charge pumping by single-electron ratchet using Si nanowire MOSFETs, 2007 International Conference on Solid State Devices and Materials (SSDM-2007, September 18-21, Tsukuba).

[100] H. Inokawa, A. Fujiwara, K. Nishiguchi, Y. Ono, and H. Satoh: A Simple Test Structure for Extracting Capacitances in Nanometer-Scale MOSFETs, The 6-th annual International Conference on Global Research and Education (inter-Academia, September 25-28, 2007, Hamamatsu).

[101] H. Kageshima and A. Fujiwara: Property of silicon quantum capacitor, The 10th Asian Workshop on First-Principles Electronic Structure Calculations (ASIAN10, Higashi-hiroshima, Japan, October 29-31, 2007).

[102] Y. Ono, M. Khalafalla, K. Nishiguchi, K. Takashina, and A. Fujiwara: (invited) Charge Transport in Boron-Doped Nano MOSFETs: Towards Single-Dopant Electronics, Fifth International Symposium on Control of Semiconductor Interfaces (ISCSI - V, November 12 -14, Tokyo).

[103] Y. Takahashi, T. Kaizawa, M. Arita, A. Fujiwara, Y. Ono, and H. Inokawa (invited):Novel-Functional Single-Electron Device Using Nanodot Array and Multiple Input Gates, *3rd International Workshop on New Group IV Semiconductor Nanoelectronics* (Nov. 8-9, 2007, Sendai, Japan).

[104] K. Nishiguchi, M. Nagase, T. Yamaguchi, A. Fujiwara, and H. Yamaguchi: Low-energy electron emission using a Si/SiO2/Si cathode for nano-decomposition, *20th International Mciroprocesses and Nanotechnology Conference (MNC)* (Nov. 5-8, Kyoto, 2007).

[105] K. Nishiguchi and A. Fujiwara: Single-electron circuit for stochastic data processing using nano-MOSFETs, *2007 International Electron Devices Meeting (IEDM)* Technical Digest pp. 791-794 (2007.12).

[106] M. Jo, T. Kaizawa, M. Arita, A. Fujiwara, K. Yamazaki, Y. Ono, H. Inokawa, Y. Takahashi and J.-B. Choi: Silicon nanodot-array device with multiple gates, E-MRS Spring Meeting, K2-P1-16, (Strasbourg, France, 2008.5).

[107] A. Fujiwara, S. Miyamoto, K. Nishiguchi1, Y. Ono, and N. M. Zimmerman: Dynamics of Single-Electron Capture in Si Nanowire MOSFETs, *2008 Silicon Nanoelectronics Workshop* (SNW-2008, June, Honolulu).

[108] H. Kageshima and A. Fujiwara: First-principles Study on Inversion Layer Properties of Double-Gate Atomically Thin Silicon Channel, *2008 Silicon Nanoelectronics Workshop* (SNW-2008, June, Honolulu).

[109] T. Kaizawa, M. Arita, A. Fujiwara, K. Yamazaki, Y. Ono, H. Inokawa and Y. Takahashi: Full adder operation based on Si nanodot array device, *2008 Silicon Nanoelectronics Workshop* (SNW-2008, June, Honolulu).

[110] K. Nishiguchi, C. Koechlin, Y. Ono, A. Fujiwara, H. Inokawa, and H. Yamaguchi: Single-Electron-Resolution Electrometer Based on Field-Effect Transistor, *Asia-Pacific Workshop on Fundamental and Application of Advanced Semiconductor Devices (AWAD 2008)*, (Sapporo, Japan, 2008.7.9-11) Workshop abstract, p.119.

[111] K. Takashina, Y. Niida, V. Renard, A. Fujiwara, Y. Hirayama, and T. Fujisawa: Negative Magnetoresistance of a Silicon 2DEG Under In-plane Magnetic Field due to Spin-splitting of Upper Subbands, 18th Int. Conf. on High Magnetic in Semiconductor Physics and Nanotechnology (HMF18), (Sao Pedro, Brazil, 2008.8.3-8).

[112] (invited) A. Fujiwara, K. Nishiguchi, Y. Ono, H. Inokawa1, and Y. Takahashi: Silicon Single-Electron Devices and Their Applications, *2008 Tera-level NanoDevices (TND) Technical Forum* (Soul, 2008.10.17).

[113] S. Miyamoto, K. Nishiguchi, Y. Ono, K M. Itoh, and A. Fujiwara: Escape dynamics of electrons in a single-electron ratchet using silicon nanowire MOSFETs, *IEEE Nanotechnology Materials and Devices (NMDC)* (Oct20-22, Kyoto, 2008).

[114] H. Kageshima and A. Fujiwara: First-principles Study on Inversion Layer Capacitance of Atomically Thin Si Channel Double Gate Field Effect Transistor, *IEEE Nanotechnology Materials and Devices (NMDC)* (Oct20-22, Kyoto, 2008).

[115] (invited) Y. Ono, M. A. H. Khalafalla, A. Fujiwara, K. Nishiguch, K. Takashinaa, S. Horiguchi, Y. Takahashi, H. Inokawa: Single-dopant effect in Si MOSFETs, *IEEE Nanotechnology Materials and Devices (NMDC)* (Oct20-22, Kyoto, 2008).

[116] K. Takashina, M. Nagase, K. Nishiguchi, Y. Ono, A. Fujiwara and T. Fujisawa: In-plane Transport in a Double Layer Crystalline Silicon Structure with an SiO2 Barrier, *IEEE Nanotechnology Materials and Devices (NMDC)* (Oct20-22, Kyoto, 2008).

[117] K. Nishiguchi, N. Clement, Y. Yamaguchi, and A. Fujiwara; Si nano-wire ion-sensitive field-effect transistors with a shared floating gate, 21th *International Microprocesses and Nanotechnology Conference (MNC)* (Oct, Fukuoka, 2008).

[118] (invited) Y. Takahashi, T. Kaizawa, M. Arita, A. Fujiwara, K. Yamazaki, Y. Ono, H. Inokawa: Novel-Functional Single-Electron Device Using Nanodot Array with Multiple Inputs and Outputs, The IUMRS International Conference in Asia 2008 (IUMRS-ICA 2008), Nagoya, Dec. 9-13, 2008.

[119] (Invited) Y. Takahashi, T. Kaizawa, M. Arita, A.Fujiwara, K. Yamazaki, Y.Ono and H. Inokawa: Novel-Functional Single-Electron Device Using Nanodot Array with Multiple Outputs, 2009 RCIQE International Seminar on "Advanced Semiconductor Materials and Devices", (Sapporo, 2009.3.2-3).

[120] M. Jo, T. Kaizawa, M. Arita, A. Fujiwara, Y. Ono, H. Inokawa, J.-B. Choi and Y. Takahashi: Fabrication of double-dot single-electron transistor in silicon nanowire, 6th Internat. Conf. Silicon Epitaxy and Heterostructures (ICSI-6), 660994 (DoubleTree Hotel, El Segundo, California: 2009.5.19)

[121] H. Kageshima and A. Fujiwara: First-principles Study on Channel Thickness Dependence of Inversion Layer DielectricConstant in Double-Gate Atomically Thin Silicon, Silicon Nanoelectronics Workshop (SNW-09), Workshop Abstracts, pp. 143-144 (2009.6.13-6.14, Kyoto)

[122] M. Khalafalla, Y. Ono, K. Nishiguchi, and A. Fujiwara: Position Analysis of Single Acceptors in Si Nanoscale Field-Effect Transistors: Silicon Nanoelectronics Workshop (SNW-09), Workshop Abstracts, pp. 139-140 (2009.6.13-6.14, Kyoto)

[123] M. Kawachi, Y. Ono, A. Fujiwara, and S. Horiguchi: Effect of δ-function-like Boron Charge Sheet on p-channel Ultra-thin SOI MOSFETs: Silicon Nanoelectronics Workshop (SNW-09), Workshop Abstracts, pp. 87-88 (2009.6.13-6.14, Kyoto)

[124] M. Jo, T. Kaizawa, M. Arita, A. Fujiwara, Y. Ono, K. Nishiguchi, H. Inokawa, Y. Takahashi and J.-B. Choi: Fabrication of Coupled-dot single-electron transistor in silicon nanowire, 2009 Silicon Nanoelectronics Workshop (SNW-09),Workshop Abstracts, pp. 155-156 (2009.6.13-6.14, Kyoto)

[125] S. Miyamoto, K. Nishiguchi, Y. Ono, K. M. Itoh, and A. Fujiwara: Single-electron activation over an oscillating barrier in silicon nanowire MOSFETs, *The 18th International Conference on Electronic Properties of Two-Dimensional Systems (EP2DS 18)* p. 244 (2009.7.19-24 Kobe).

[126] K. Takashina, K. Nishiguchi, Y. Ono, A. Fujiwara, T. Fujisawa, Y. Hirayama and K. Muraki: Electron-hole transport in a 40 nm thick silicon slab, *The 18th International Conference on Electronic Properties of Two-Dimensional Systems (EP2DS 18)* p. 154 (2009.7.19-24 Kobe).

[127] (invited) Y. Takahashi, T. Kaizawa, M. Arita, A. Fujiwara, K.Yamazaki, Y.Ono and H. Inokawa and J.-B. Choi: Novel-Functional Single-Electron Devices Using Silicon Nanodot Array, 2009 Asia-Pacific Workshop on Fundamentals and Applications of Advanced Semiconductor Devices (AWAD 2009), (2009.6.24-26, Busan, Korea).

[128] (invited) A. Fujiwara, K. Nishiguchi and Y. Ono: Silicon Nanowire MOSFETs and Their Application to Single-Electron Devices, International Conference on Nanoscience and Technology (ChinaNANO) 2009, p. 50-51 (September 1-3, 2009,Beijing)

[129] (invited) A. Fujiwara, K. Nishiguchi and Y. Ono: Single-electron devices based on silicon nanowire MOSFETs, Trends in Nanotechnology (TNT2009) p.39 (September 7-11, 2009,Barcelona)

[130] M.Jo, K.Kato, M.Arita, Y.Ono, A.Fujiwara, H.Inokawa, Y.Takahashi and J.-B.Choi: Logic switching characteristics of multiple-gate nanodot array device, 1st International Work. Si based nano-elect. & -photonics (SiNEP-09), (@Vigo, Spain: 2009.9.20-23)

[131] J. Noborisaka, K. Nishiguchi, H. K ageshima, Y. Ono, and A. Fujiwara: Tunnel Spectroscopy of Electron Subbands in Thin SOI MOSFETs, 2009 International Conference on Solid State Devices and Materials (SSDM-2009), Extended Abs. pp. 262-263 (Oct. 6-9, 2009 Sendai).

[132] K. Nishiguchi, Y. Ono, and A. Fujiwara: Single-electron counting statistics of shot noise in nanowire Si MOSFETs, International Conference on Solid State Devices and Materials (SSDM-2009), Extended Abs. pp. 1140-1141 (Oct. 6-9, 2009 Sendai).

[133] N. Clement, K. Nishiguchi, A. Fujiwara and D. Vuillaume: Random Telegraph Signal and Low Frequency Noise in Silicon Charge-Sensitive Electrometers, International Conference on Solid State Devices and Materials (SSDM-2009), Extended Abs. pp. 1138-1139 (Oct. 6-9, 2009 Sendai).

[134] (invited) Y. Ono, M. A. H. Khalafalla1, S. Horiguchi, K. Nishiguchi, A. Fujiwara: Identification of Single Boron Acceptors in Nanowire MOSFETs -A Base for Single-Dopant Electronics, 2009 International Conference on Solid State Devices and Materials (SSDM-2009), Extended Abs. pp. 1134-1135 (Oct. 6-9, 2009 Sendai).

[135] K. Nishiguchi, S. Miyamoto, and A. Fujiwara: Single-electron stochastic resonance using Si nano-wire transistors, 22 th *International Microprocesses and Nanotechnology Conference (MNC)* (November 16-19, Sapporo, 2009).

[136] M. Jo, K. Kato, M. Arita, A. Fujiwara, Y. Ono, K. Nishiguchi, H. Inokawa, Y. Takahashi and J.-B. Choi: Fabrication of triple-dot single-electron transistor and its single-electron transfer operation, Internat. Symp. Adv. Nanost. Nano-Dev. (ISANN) , P1-13 (Sheraton Maui Resort & Spa, Kaanapali, Hawaii: 2009.12.9)

[137] Y. Takahashi, M. Jo, Y. Kato, M. Arita, A. Fujiwara, Y. Ono, K. Nishiguchi, H. Inokawa, and J.-B. Choi: Fabrication method for triple-coupled dots based on pattern-dependent oxidation, Int. Workshop on New Group IV Semiconductor, (2010.1.29-30, Sendai).

[138] (invited): A. Fujiwara, K. Nishiguchi, and Y. Ono: Single electron transfer technology using Si nanowire MOSFETs, *2010 International Symposium on Atom-scale Silicon Hybrid Nanotechnologies for 'More-than-Moore' & 'Beyond CMOS' Era* (March 1 – 2, 2010, Southampton, UK), Program and Abstracts, pp. 19 – 20.)

[139] (invited): Y. Ono, M. Khalafalla, K. Nishiguchi, and A. Fujiwara: Single dopant effects in silicon nano transistors, *2010 International Symposium on Atom-scale Silicon Hybrid Nanotechnologies for 'More-than-Moore' & 'Beyond CMOS' Era* (March 1 -2, 2010, Southampton, UK), Program and Abstracts, pp. 25 – 26.)

[140] (invited): Y. Ono, M. Khalafalla, K. Nishiguchi, and A. Fujiwara: Single dopant effects in silicon nano transistors, *2010 Single Dopant Control* (March 29 -April 1, 2010, Leiden, Netherlands).

[141] Y. Kato, M. Jo, M. Arita, A. Fujiwara, Y. Ono, K. Nishiguchi, H. Inokawa, Y. Takahashi and J.-B. Choi: Analysis of Tunneling Potential of Si SETs Fabricated by Pattern-Dependent Oxidation, 2010 Silicon Nanoelectronics Workshop (SNW-10), (2010.6.13-6.14, Honolulu)

[142] Y. Takahashi, M. Jo, Y. Kato, T. Kaizawa, A. Fujiwara, M. Arita: Si nanodot device fabricated by thermal oxidation and their applications, International Symposium on Technology Evolution for Silicon Nano-Electronics (ISTESNE), (2010 6.3-6.5, Tokyo).

[143] Y. Niida, K. Takashina, Y. Ono, A. Fujiwara and Y. Hirayama: Electron-mobility suppression under valley-polarized region in Si quantum well, *30^{h} International Conference on the Physics of Semiconductors (ICPS)* (Seoul, 2010.7.25-30)

[144] Y. Ono, Y. Miyazaki, S. Yabuuchi, H. Kageshima, M. Nagase, A. Fujiwara and E. Ota :Significance of the Interface regarding Magnetic Properties of Mn-Nanosilicide in Silicon, Asia-Pacific Conference on Semiconducting Silicides Science and Technology Towards Sustainable (APAC-SILICIDE 2010) (Tsukuba, 2010.7.24-26).

[145] H. Kageshima and A. Fujiwara: Effective dielectric constant of Si-nanofilm channel in the full inversion regime under field effect due to symmetric double gate, *30h International Conference on the Physics of Semiconductors (ICPS)* (Seoul, 2010.7.25-30)

[146] Y. Niida, K. Takashina, Y. Ono, A. Fujiwara and Y. Hirayama: Valley polarization and interface quality in SiO2/(100)Si/SiO2 quantum well, Workshop on Silicon S&T Quantum Computing (2010.8.23-24, Albuquerque).

[147] J. Noborisaka, K. Nishiguchi, H. K ageshima, Y. Ono, and A. Fujiwara: Strong stark effect of electroluminescence in thin SOI MOSFETs, 2010 International Conference on Solid State Devices and Materials (SSDM-2010), Extended Abs. pp. 796-797(Sept. 22-24, 2010 Tokyo).

[148] K. Nishiguchi and A. Fujiwara: Body-biased steep-subthreshold-swing MOS (BS-MOS) with small hysteresis, off current, and drain voltage, 2010 International Conference on Solid State Devices and Materials (SSDM-2010), Extended Abs. pp. 1261-1262(Sept. 22-24, 2010 Tokyo).

[149] T. Goto, H. Inokawa, Y. Ono, A. Fujiwara and K. Torimitsu: Effect of Device Structure on Electrical Conduction of Terphenyl-based Molecule, 2010 International Conference on Solid State Devices and Materials (SSDM-2010), Extended Abs. pp. 507-508(Sept. 22-24, 2010 Tokyo).

[150] Y. Kato, M. Jo, M. Arita, A. Fujiwara, Y. Ono, K. Nishiguchi, H Inokawa, and Y Takahashi: Analysis of Tunneling Potential of Si SETs Formed by Pattern-Dependent Oxidation, *Seventh International Conference on Flow Dynamics*, (2010.11, 1-3@Sendai).

[151] K. Nishiguchi and A. Fujiwara: Fast sensing using single-electron stochastic resonance in Si nano-wire transistors, 23 th *International Microprocesses and Nanotechnology Conference (MNC)* (November 9-12, Kokura, 2010).

[152] (invited) K. Nishiguchi and A. Fujiwara: Single-electron devices based on Si nanoscale FETs, Workshop on Innovative Devices and Systems (WINDS) (2010.12.17-20, Honolulu).

[153] Ted Thorbeck, A. Fujiwara, and N. Zimmerman: Gate Capacitance Reproducibility and Modeling in Silicon Double Quantum Dots, 2011 APS March meeting (2011.3.21-3.25, Dallas).

[154] (invited): Y. Ono, M. A. H. Khalafalla, J. Noborisaka, G. P. Lansbergen, A. Fujiwara: Dopants in silicon transistors; Transport and Photoemission, CMOS Emerging Technologies Workshop (June 15 – 17, 2011, Whistler, BC, Canada).

[155] M. Sinohara, Y. Kato, M. Arita, A. Fujiwara, Y. Ono, K. Nishiguchi, H. Inokawa, and Y. Takahashi: Observation of New Current Peaks of Si Single-Electron Transistor with a Single-Hole Trap, 2011 Silicon Nanoelectronics Workshop (SNW-11), (Jun 2011, Kyoto)

[156] G.P. Lansbergen , Y. Ono and A. Fujiwara: Charge switching in wire MOSFETs studied by separation of capture and emission, 2011 Silicon Nanoelectronics Workshop (SNW-11), (Jun 2011, Kyoto)

[157] S. Horiguchi and A. Fujiwara: Fluctuation of Average Position of Electrons in Coulomb Island in Si Single-Electron T ransistor, 7th Int. Conf. on Si Epitaxy and Heterostructures (ICSI-7), (Aug.28-Sept.1, 2011 Leuven)

[158] Y. Niida , K. Takashina, A. Fujiwara, Y. Ono and Y. Hirayama: Subband energy manipulation by gate voltage in Si (100) hole system, 19th international conference on Electronic Properties of Two-Dimensional Systems (EP2DS19), Florida, USA (Jul. 2011).

[159] G. Yamahata, K. Nishiguchi, and A. Fujiwara: Accuracy of Single-electron Shuttle Transfer in Si Nanowire MOSFETs, 19th international conference on Electronic Properties of Two-Dimensional Systems (EP2DS19), Florida, USA (Jul. 2011).

[160] I. Mahboob, Q. Wilmart, K. Nishiguchi, A. Fujiwara and H. Yamaguchi: Mechanical idler generation, 2011 International Conference on Solid State Devices and Materials, Nagoya, Japan (Sep. 2011).

[161] G.P. Lansbergen , Y. Ono and A. Fujiwara: Charge transfer by multiple donors in a Si nanowire, 2011 International Conference on Solid State Devices and Materials, Nagoya, Japan (Sep. 2011).

[162] K. Nishiguchi and A. Fujiwara: Stochastic resonance using a steep-subthreshold-swing transistor, 24th International Microprocesses and Nanotechnology Conference (MNC 2011), Kyoto, Japan (Oct. 2011).

[163] G.P. Lansbergen , Y. Ono and A. Fujiwara: Donor based SE pumps with tunable donor binding: the International Conference on Nanoscience and Nanotechnology (ICONN 2012), Session 11.8-2, Perth, Austraila (Feb. 5-9).

[164] (invited) A. Fujiwara, G. Yamahata, K. Nishiguchi, G. P. Lansbergen and Y. Ono: Silicon Single-Electron Transfer Devices: Ultimate Control of Electric Charge, 2012 Silicon Nanoelectronics Workshop (June 2012, Hawaii, USA).

[165] H. Takenaka, M. Shinohara, T. Uchida , M. Arita, A. Fujiwara, Y. Ono, K. Nishiguchi. Ho. Inokawa. and Y. Takahashi: High-frequency properties of Si Single-electron transistor, 2012 Silicon Nanoelectronics Workshop (June 2012, Hawaii, USA).

[166] D. Tregurtha, K. Takashina, and A. Fujiwara: 2-dimensional electrons and holes in a 40 nm thick silicon layer, UK Semiconductors 2012, Sheffield, UK (July 2012).

[167] K. Takashina, Y. Niida, V.T. Renard, A. Fujiwara, T. Fujisawa, K. Muraki, and Y. Hirayama: Impact of valley-polarization on silicon-on-insulator transistors, UK Semiconductors 2012, Sheffield, UK (July 2012).

[168] K. Takashina, Y. Niida, V.T. Renard, B.A. Piot, D.S.D. Tregurtha, A. Fujiwara, and Y. Hirayama: Spin and Valley Polarization Dependence of Resistivity in Two-Dimensions, *31^{h} International Conference on the Physics of Semiconductors (ICPS)* (Zurich, 2012.7.29-8.3)

[169] S. Sasaki, G.. Zhang, K. Tateno, H. Suominen, Y. Harada, S. Saito, A. Fujiwara, T. Sogawa and K. Muraki: Fully Encapsulated Gate-All-Around InAs Nanowire FET, 2012 International Conference on Solid State Devices and Materials (SSDM2012) (Sept. 25-27, 2010 Kyoto).

[170] C. J. Edwardson, P. G. Coleman, K. Takashina, D. Tregurtha and A. Fujiwara: Positron Studies of Silicon Quantum Well Interfaces, 16th International Conference on Positron Annihilation (ICPA-16), (Bristol, UK, 19-24 August, 2012).

[171] A. Fujiwara, G. Yamahata, and K. Nishiguchi: Accuracy of single-electron transfer in Si nanowire MOSFETs, Workshop on Innovative Nanoscale Devices and Systems (WINDS) p.56 (2012.12.2-7, Hawaii).

[172] S. Sasaki, G.. Zhang, K. Tateno, H. Suominen, Y. Harada, S. Saito, A. Fujiwara, T. Sogawa and K. Muraki: Characteristics of Gate-All-Around InAs Nanowire FETs Workshop on Innovative Nanoscale Devices and Systems (WINDS) Abstract p.40 (2012.12.2-7, Hawaii).

[173] A. Fujiwara: Silicon single-electron transfer device,, 2013 International Workshop On Silicon Quantum Electronics (Grenoble, France , Feb. 2013) .

[174] G. Yamahata, K. Nishiguchi, and A. Fujiwara: Crossover of transfer mechanism in Si single-electron turnstiles, 2013 International Workshop On Silicon Quantum Electronics (Grenoble,

France , Feb. 2013) .

[175] D.S.D. Tregurtha, K. Takashina, A. Fujiwara: Current-Voltage Characteristics of a Silicon-On-Insulator based Vertically Coupled Electron-Hole System, 2013 International Workshop On Silicon Quantum Electronics (Grenoble, France , Feb. 2013) .

[176] K. Takashina, Y. Niida, V.T. Renard, B.A. Piot, D.S.D. Tregurtha, A. Fujiwara and Y. Hirayama: Spin and Valley Polarization Dependence of Resistivity in Two-Dimensions, 2013 International Workshop On Silicon Quantum Electronics (Grenoble, France , Feb. 2013) .

[177] N. Clement, K. Nishiguchi, D. Vuillaume, and A. Fujiwara.: Dielectric Polarization 1/f Noise: a signature of defect-free oxides at nanotransistors interface APS March Meeting, Maryland, USA (Mar. 2013).

[178] N. Clement, T. Dargent, H. Tanbakuchi, K. Nishiguchi, R. Sivakumarasamy, F. Wang, A. Fujiwara, D. Ducatteau, G. Dambrine, D. Vuillaume, B. Legrand, and D. Theron: Interferometric Scanning Microwave Microscope for Nanotechnology Application, APS March Meeting, Maryland, USA (Mar. 2013).

[179] N. Clement, K. Nishiguchi, J-F. Dufreche, D. Guerin, G. Patriarche, D. Troadec, A. Fujiwara, and D. Vuillaume: Transducing Energy Loss in Water Electrolysis with a 0D Ion-Sensitive Field-Effect Transistor , APS March Meeting, Maryland, USA (Mar. 2013).

[180] M. Hori, H. Tanaka, A. Fujiwara and Y. Ono: ESR study of arsenic in silicon in low ion-implantation-dose regime, The 4th International Symposium on Organic and Inorganic Electronic Materials and Related Nanotechnologies (EM-NANO 2013), Kanazawa, Japan June 17-20, 2013.

[181] I. Yoshioka, T. Uchida, M. Arita, A. Fujiwara and Y. Takahashi: Excited states in double-gate Si single-electron transistors in the few electron regime, 2013 Silicon Nanoelectronics Workshop (June 9-10, 2013, Kyoto, Japan).

[182] T. Uchida, H. Takenaka, I. Yoshioka, M. Arita, A. Fujiwara and Y. Takahashi: Double-dot Si single-electron transistor with tunable coupling capacitive by the number of electrons in the dot, 2013 Silicon Nanoelectronics Workshop (June 9-10, 2013, Kyoto, Japan).

[183] J. Noborisaka, K. Nishiguchi, A. Fujiwara: Enhancement of phononless optical transitions by large valley splitting in silicon MOSFETs, the 12th Asia Pacific Physics Conference (APPC), (Makuhari, Japan, July 14-19, 2013).

[184] S. Sasaki, G.. Zhang, K. Tateno, Y. Harada, S. Saito, A. Fujiwara, T. Sogawa and K. Muraki: Field-effect transistors fabricated from InAs nanowires grown via self-assisted vapor-liquid-solid mode, the 12th Asia Pacific Physics Conference (APPC), (Makuhari, Japan, July 14-19, 2013).

[185] V.T. Renard, Y. Niida, I. Duchemin, A. Fujiwara, Y. Hirayama and K. Takashina: Influence of intervalley scattering on the metallic behavior in Si MOSFETs, 20th international conference on Electronic Properties of Two-Dimensional Systems (EP2DS20), Poland (Jul. 1-5, 2013).

[186] V.T. Renard, B.A. Piot, Y. Niida, D.S.D. Tregurtha, A. Fujiwara, Y. Hirayama, X. Waintal, G. Fleury, and K. Takashina: Effects of Valley Polarization on Spin Polarization in a Silicon 2DEG, 20th international conference on Electronic Properties of Two-Dimensional Systems (EP2DS20), Poland (Jul. 1-5, 2013).

[187] (invited: Plenary) A. Fujiwara, Silicon-based nanodevices for diverse applications, 39th Int. Conf. on Micro and Nano Engineering (MNE) (London, UK, Sept. 16-19 2013).

[188] R. Sivakumarasamy, K. Nishiguchi, A. Fujiwara, D. Vuillaume, and N. Clement: Ultimate Integration of a PDMS-Based Lab-on-a-Chip with Nanotransistor Bio-sensors, 26th International Microprocesses and Nanotechnology Conference (MNC 2013), Sapporo, Japan (Nov. 2013).

[189] Y. Takahashi, H. Takenaka, T. Uchida, M. Arita, A. Fujiwara and H. Inokawa: High-speed operation of Si single-electron transistor, 2013 ECS Autumn meeting (Oct.27-Nov. 1, 2013, USA).

[190] N. Clement, F. Wang, K. Nishiguchi, A. Fujiwara, G. Patriarche, D. Troadec, B. Legrand, G. Dambrine and D. Theron: Dual-gate Silicon Single-Electron Transistor Threshold Voltage mapping at Nanoscale with a Scanning Microwave Microscope, 26th International Microprocesses and Nanotechnology Conference (MNC 2013), Sapporo, Japan (Nov. 2013).

[191] K. Nishiguchi,H. Yamaguchi, A. Fujiwara, H. S. J. van der Zant, and G. A. Steele: High-charge-sensitivity radio-frequency field-effect transistor with large and tunable readout frequency, 26th International Microprocesses and Nanotechnology Conference (MNC 2013), Sapporo, Japan (Nov. 2013).

[192] G. Yamahata, K. Nishiguchi, and A. Fujiwara: Mechanism crossover of single-electron transfer in Si tunable-barrier turnstiles, The International Symposium on Nanoscale Transport and Technology (ISNTT2013), (Kanagawa, Japan , Nov. 2013)

[193] J. Noborisaka, K. Nishiguchi, and A. Fujiwara: Electrical tuning of phononless optical transition by controlling valley splitting in silicon MOSFETs, The International Symposium on Nanoscale Transport and Technology (ISNTT2013), (Kanagawa, Japan , Nov. 2013)

[194] (invited) Y. Ono, G. P. Lansbergen, M. Hori and A. Fujiwara, Electron pump by a single atom towards ultimate control of electronic charges, 2014 International Workshop on Advanced Nanovision (Hamamatsu, Japan, Jan. 20-21, 2014)

[195] V.T. Renard, B. A. Piot, Y. Niida, D. Tregurtha, A. Fujiwara, and Y. Hirayama, X. Waintal, G. Fleury and K. Takashina: Valley Polarization Assisted Spin Polarization in a Silicon Based Two-dimensional Electron System, UK Semiconductors 2014, Sheffield, UK (July 9-10, 2014).

[196] J. Noborisaka, K. Nishiguchi, and A. Fujiwara, Enhanced inter-band dipole transition due to large valley splitting at the Si/SiO_2 interface, 2014 Silicon Quantum Electronic Workshop, (Albuquerque, USA , August 18-19 2014).

[197] K. Chida, K. Nishiguchi, G.. Yamahata, and A. Fujiwara: Thermal-noise suppression in nanometer-scale Si field-effect transistors by feedback control with single-electron resolution, 2014 International Conference on Solid State Devices and Materials, Tsukuba, Japan (Sep. 2014).

[198] S. Sasaki, K. Tateno, G.. Zhang, Y. Harada, S. Saito, A. Fujiwara, T. Sogawa and K. Muraki: Encapsulated Gate-All-Around InAs/InP Core-Shell Nanowire FETs, 2014 International Conference on Solid State Devices and Materials, Tsukuba, Japan (Sep. 2014).

[199] (invited) A. Fujiwara, K. Nishiguchi, G. Yamahata, Silicon nanowire MOSFETs for diverse applications, The 6th IEEE International Nanoelectronics Conference 2014 (INEC2014) (Sapporo, July 28-31, 2014)

[200] T. Uchida, I. Yoshioka, H. Sato, M. Arita, A. Fujiwara and Y. Takahashi: Double-quantum-dot Si single-electron transistor with multiple gates, The 6th IEEE International Nanoelectronics Conference 2014 (INEC2014) (Sapporo, July 28-31, 2014)

[201] I. Yoshioka, H. Sato, T. Uchida, A. Fujiwara, M. Arita, and Y. Takahashi: Highly functionality of three-terminals nanodot array, The 6th IEEE International Nanoelectronics Conference 2014 (INEC2014) (Sapporo, July 28-31, 2014)

[202] H. Sato, T. Uchida, I. Yoshioka, A. Fujiwara, M. Arita, and Y. Takahashi: The research of Excited states in Si-SET, The 6th IEEE International Nanoelectronics Conference 2014 (INEC2014) (Sapporo, July 28-31, 2014)

[203] N. Clement, K Nishiguchi, J-F Dufreche, D. Guerin, A. Fujiwara, and D. Vuillaume, Water electrolysis and energy harvesting with 0D Ion-Sensitive Field-Effect Transistors, The 1st

International Symposium on Energy Challenges & Mechanics (ECM2014), Scotland, UK (Jul. 2014).

[204] R. Sivakumarasamy, K. Nishiguchi, A. Fujiwara, D. Vuillaume, and N. Clement, Zero Dimensional Ion-Sensitive Field-Effect Transistors, 27th International Microprocesses and Nanotechnology Conference (MNC 2014), Fukuoka, Japan (Nov. 2014).

[205] K. Nishiguchi, A. Castellanos-Gomez, H. Yamaguchi, A. Fujiwara, H. S. J. van der Zant, and G. A. Steele, Tunnel diode composed of MoS2/SiO2/Si heterojunction, 27th International Microprocesses and Nanotechnology Conference (MNC 2014), Fukuoka, Japan (Nov. 2014).

[206] K. Nishiguchi and A. Fujiwara, Violation of equipartition of energy in thermal noise of a small DRAM, 27th International Microprocesses and Nanotechnology Conference (MNC 2014), Fukuoka, Japan (Nov. 2014).

[207] K. Nishiguchi, Y. Ono, and A. Fujiwara, Counting statistics of single-electron thermal noise, 2014 Workshop on Innovative Nanoscale Devices and Systems (WINDS), (Hawaii, Nov. 30- Dec. 5, 2014)

[208] （invited: Plenary talk): A. Fujiwara, Silicon single-electron devices for ultimate electronics, EURAMET DC & Quantum Metrology Meeting (Bern, 27-29 May 2015)

[209] (invited) A. Fujiwara, G. Yamahata, J. Noborisaka, and K. Nishiguchi, Nanoscale Silicon MOSFET for Metrology and Valleytronics Applications, 2015 UK-Japan Silicon Nanoelectronics and Nanotechnology Symposium (Southampton, 9-10 July, 2015).

[210] (invited) J. Noborisaka, K. Nishiguchi, and A. Fujiwara, Gate tuning of direct optical transitions in silicon, 2015 Asia-Pacific Workshop on Fundamentals and Applications of Advanced Semiconductor Devices (AWAD2015), Jeju Island, Korea (June29-July1. 2015) Tu-A3-4.

[211] (invited) N. Clement, K. Nishiguchi, A. Fujiwara, and G. Larrieu, Ultra-low noise nanoscale transistors for metrology of noise, energy harvesting and biosensing applications, 2015 IEEE Int. Conf. on Noise and Fluctuations (INCF 2015) (Xian, China, June 2-6, 2015).

[212] T. Watanabe, M. Hori, T. Saruwatari, A. Fujiwara, and Y. Ono: Low Temperature Charge Pumping in SOI Gated PIN Diode, 2015 Silicon Nanoelectronics Workshop (Kyoto, Japan, June 14-15, 2015).

[213] T. Uchida, H. Sato, A. Tsurumaki-Fukuchi, M. Arita, A. Fujiwara, and Y. Takahashi: Series-triple quantum dots fabricated under each control gate by the use of thermal oxidation, 2015 Silicon Nanoelectronics Workshop (Kyoto, Japan, June 14-15, 2015).

[214] H. Sato, T. Uchida, A. Tsurumaki-Fukuchi, M. Arita, A. Fujiwara, and Y. Takahashi: Variation of Coulomb diamonds and excited states caused by electric field in Si single-electron transistor, 2015 Silicon Nanoelectronics Workshop (Kyoto, Japan, June 14-15, 2015).

[215] T. Hayashi, A. Fujiwara, R. Shidachi, T. Yokota and T. Someya, AC transport characteristics of a Au/DNTT/Al Schottky diode, 34th Electronic Materials Symposium (Moriyama, Japan, July 15-17, 2015).

[216] G. Yamahata, K. Nishiguchi, M. Kataoka, and A. Fujiwara, 21st International Conference on Electronic Properties of Two-Dimensional Systems (EP2DS21), Sendai Japan (Jul. 26-31, 2015).

[217] V. T. Renard, B. A. Piot, X. Waintal, G. Fleury, D. Cooper, Y. Niida, D. Tregurtha, A. Fujiwara, Y. Hirayama, and K. Takashina, Valley polarisation assisted spin polarisation in two dimensions, 21st International Conference on Electronic Properties of Two-Dimensional Systems (EP2DS21), Sendai, Japan (Jul. 26-31, 2015).

[218] G. Yamahata, K. Nishiguchi, S. P. Giblin, M. Kataoka, and A. Fujiwara, Ultrafast single-charge transfer in silicon up to 8 GHz, Silicon Quantum Electronics Workshop 2015, Takamatsu, Japan (Aug.3-4 2015)

[219] H. Tanaka, G. Yamahata, K. Nishiguchi, and A. Fujiwara, Error detection and correction of single-electron transfer, Silicon Quantum Electronics Workshop 2015, Takamatsu, Japan (Aug.3-4 2015).

[220] T. Uchida, H. Sato, A. Tsurumaki-Fukuchi, M. Arita, A. Fujiwara, and Y. Takahashi, Tunable coupling capacitance of double quantum dot by an electric field Silicon Quantum Electronics Workshop 2015, Takamatsu, Japan (Aug.3-4 2015).

[221] (invited) A. Fujiwara, G. Yamahata, and K. Nishiguchi, Gigahertz Single-Electron Pump towards a Representation of the New Ampere, 2015 International Conference on Solid State Devices and Materials (SSDM) , Sapporo , 27-30 September, 2015.

[222] T. Yamaguchi, M. Komura, K. Nagai, A. Fujiwara, H. Yamaguchi, and T. Iyoda, Directed Self-Assembly of Amphiphilic Liquid-Crystalline Block Copolymer, IUPAC 11th International Conference on Advanced olymers via Macromolecular Engineering (APME 2015), Yokohama, Japan (Oct 18-22, 2015).

[223] D. Yoshizumi, K. Nishiguchi, Y. Sekine, K. Furukawa, A. Fujiwara, and M. Nagase, Electron Emission Using Multilayered-Graphene/SiO2/Si Heterodevice Driven with Low-Voltage Supply in Low Vacuum, 28th International Microprocesses and Nanotechnology Conference (MNC 2015), Toyama, Japan (Nov 10-13, 2015).

[224] T. Watanabe, M. Hori, T. Saruwatari, A. Fujiwara, and Y. Ono, Cryogenic Charge Pumping using Silicon on Insulators, 28th International Microprocesses and Nanotechnology Conference (MNC 2015), Toyama, Japan (Nov 10-13, 2015).

[225] T. Yamaguchi and A. Fujiwara, Ordering Analysis of In-Plane Cylindrical domains of Polystyrene-b-Polydimethylsiloxane Formed by Thermal Annealing, 28th International Microprocesses and Nanotechnology Conference (MNC 2015), Toyama, Japan (Nov 10-13, 2015).

[226] M. Jo, T. Uchida, A. Tsurumaki-Fukuchi, M. Arita, A. Fujiwara, Y. Ono, K. Nishiguchi, H. Inokawa, and Y. Takahashi, Fabrication of Triple-Dot Single-Electron Transistor and its Turnstile Operation, 28th International Microprocesses and Nanotechnology Conference (MNC 2015), Toyama, Japan (Nov 10-13, 2015).

[227] R. Sivakumarasamy, K. Nishiguchi, A. Fujiwara, and N. Clement, Selective-Layer-Free Blood Ionogram Using a 0D Nanotransistor Biosensor, 28th International Microprocesses and Nanotechnology Conference (MNC 2015), Toyama, Japan (Nov 10-13, 2015).

[228] G. Yamahata, S. P. Giblin, M. Kataoka, and A. Fujiwara: High-accuracy 2-GHz single-electron pumping in silicon, The International Symposium on Nanoscale Transport and Technology (ISNTT2015), (Kanagawa, Japan , Nov. 17-20, 2015) .

[229] K. Chida, K. Nishiguchi, G. Yamahata, H. Tanaka, and A. Fujiwara: Thermal noise suppression by feedback control to single-electron motion, The International Symposium on Nanoscale Transport and Technology (ISNTT2015), (Kanagawa, Japan , Nov. 17-20, 2015) .

[230] T. Hayashi, T. Yokota, R. Shidachi, A. Fujiwara and T. Someya: Transport properties of a Ag /pentacene / Ag junction, The International Symposium on Nanoscale Transport and Technology (ISNTT2015), (Kanagawa, Japan , Nov. 17-20, 2015) .

[231] M. Villiers, I. Mahboob, K. Nishiguchi, D. Hatanaka, A. Fujiwara and H. Yamaguchi, Correlated phonons in a micro-nano-electromechanical system, The International Symposium on Nanoscale Transport and Technology (ISNTT2015), (Kanagawa, Japan , Nov. 17-20, 2015) .

[232] G. Yamahata, S. P. Giblin, M. Kataoka, T. Karasawa and A. Fujiwara: High-accuracy measurement of single-trap electron pumps in Si, International Symposium on Advanced Nanodevices and Nanotechnology (ISANN 2015) (Hawaii , USA, Nov. 29- Dec.4, 2015)

[233] T. Uchida, M. Jo, H. Sato, A. Tsurumaki-Fukuchi, M. Arita, A. Fujiwara, and Y. Takahashi: Evaluation of the origin of excited states appeared in small Si single-electron transistors, 2016 Silicon Nanoelectronics Workshop (Honolulu, USA, June 12-13, 2016).

[234] S. P. Giblin, M. -H. Bae, G. Yamahata, P. See, J. D. Fletcher. T. J. B. M. Janssen, N. Kim, A. Fujiwara, J. P. Griffiths, G. A. C Jonse, I Farrer, D. A. Ritchie, D. Drung, C. Krause, F. Stein, and M. Kataoka, Universality of the tunable-barrier electron pump at the part-per-million level, 2016 Conference on Precision Electromagnetic Measurements (CPEM 2016) (Ottawa, July 10-15, 2016).

[235] S. P. Giblin, G.. Yamahata, J. M. Williams, S. Rozhko, T. J. B. M. Janssen, A. Fujiwara, and M. Kataoka, Scaling the current from a GHz electron pump using a CCC, 2016 Conference on Precision Electromagnetic Measurements (CPEM 2016) (Ottawa, July 10-15, 2016).

[236] (invited) A. Fujiwara, G. Yamahata, K. Nishiguchi, S. P. Giblin, and M. Kataoka, Gigahertz single-electron pump for quantum current standard, 33rd ICPS (Beijing, 31 July- 5 August, 2016)

[237] K. Chida, K. Nishiguchi, and A. Fujiwara, Electric current generation with Maxwell's demon in a Si single-electron device, 33rd ICPS (Beijing, 31 July- 5 August, 2016)

[238] I. Mahboob, M. Villiers, , K. Nishiguchi, D. Hatanaka, A. Fujiwara, and H. Yamaguchi: Correlated phonons in spectrally and spatially distinct electromechanical resonators, 33rd ICPS (Beijing, 31 July- 5 August, 2016)

[239] T. Uchida, M. Jo, A. Tsurumaki-Fukuchi, M. Arita, A. Fujiwara, and Y. Takahashi: Evaluation of serially coupled triple quantum dots with a compact device structure by a simultaneous voltage-sweeping method, 2016 IEEE 16th International Conference on Nanotechnology (Sendai, Japan, August 22-25, 2016).

[240] T. Hayahshi, A. Naka, A. Fujiwara, T. Yokota, and T. Someya, Field Dependence of the Space-charge Limited Current in Polycrystalline Pentacene2016 International Conference on Solid State Devices and Materials (SSDM) , Tsukuba , 26-29 September, 2016.

[241] Y. Ono, M. Hori, G. P. Lansbergen, and A. Fujiwara, Manipulation of single charges using dopant atoms in silicon -Interplay with intervalley phonon emission-, The 15-th International Conference on Global Research and Education (Inter-Academia, September 26-28, Warsaw, 2016)

[242] (invited) N. Clement and A. Fujiwara: 10 nm-scale Nanotechnology: from Nanoarrays to 0D Nanotransistor Biosensors, The 18th Takayanagi Kenjiro Memorial Symposium (Hamamatsu, Japan, Nov. 15-16, 2016).

[243] Y. Ono, M. Hori, G. P. Lansbergen, and A. Fujiwara, Manipulation of single charges using dopant atoms in silicon -Interplay with intervalley phonon emission-, The 15-th International Conference on Global Research and Education (Inter-Academia) (Warsaw, Poland, September 26-28, 2016)

[244] Y. Ono, M. Hori, and A. Fujiwara, Silicon Single Boron Transistor, Joint International Conference - The 3rd International Conference on Nano Electronics Research and Education (ICNERE)The 8th Electrical, Electronics, Control, Communication, and Informatics Seminar (EECCiS) (Malang, Indonesia, Oct. 31-Nov. 2, 2016)

[245] (invited) A. Fujiwara, K. Nishiguchi, G. Yamahata, and K. Chida, Ultimate Single Electronics with Silicon Nanowire MOSFETs, 2017 Silicon Nanoelectronics Workshop (June 4-5, 2017, Kyoto, Japan).

[246] H. Firdaus, M. Hori, Y. Takahashi, A. Fujiwara, and Y. Ono, Remote Detection of Holes Generated by Impact Ionization in Silicon, 2017 Silicon Nanoelectronics Workshop (June 4-5, 2017, Kyoto, Japan).

[247] (invited) A. Fujiwara, K. Nishiguchi, G. Yamahata, and K. Chida, Ultimate electronics with

control of single electrons, EM-NANO2017 (June 18-21, 2017, Fukui, Japan).

[248] T. Hayashi, M. Hiroki, and A. Fujiwara, A percolation aspect of hopping transport in amorphous pentacene, 9th International Conference on Molecular Electronics and Bioelectronics (M&BE9) (June 26-28, 2017, Kanazawa, Japan).

[249] N. Clement, K. Nishiguchi, and A. Fujiwara, Tunable ion adsorption kinetics on a nanoscale transistor towards iontronics applications, 9th International Conference on Molecular Electronics and Bioelectronics (M&BE9) (June 26-28, 2017, Kanazawa, Japan).

[250] R. Sivakumarasamy, R. Hartkamp, J.-F. Dufreche, B. Siboulet, K. Nishiguchi, A. Fujiwara, and N. Clement, Blood ionogram based on ion-specificity using a nanoscale silicon transistor, 9th International Conference on Molecular Electronics and Bioelectronics (M&BE9) (June 26-28, 2017, Kanazawa, Japan).

[251] (invited) A. Fujiwara, Ultimate Electronics with Control of Single Electrons, 7th Summer School on Semiconductor/Superconducting Quantum Coherence Effect and Quantum Information (August 27-29, 2017, Shuzenji, Japan).

[252] M. Kataoka, S. P. Giblin, J. D. Fletcher, P. See, J. P. Griffiths, G. A. C. Jones, I. Farrer, D. A. Ritchie, M. –H. Bae, Y.-H. Ahn, M. Seo, Y. Chung, N. Kim, G. Yamahata, T. Karasawa, A. Fujiwara, R. Zhao, A. Rossi, F. E. Hudson, M. Möttönen, A. S. Dzurak, and T. J. B. M. Janssen, Accurate operation of single-electron pumps beyond 1 GHz, BIPM Workshop "The Quantum Revolution in Metrology" (September 28-29, 2017, Sèvres, France).

[253] S. P. Giblin, P. See, J. D. Fletcher, J. P. Griffiths, G. A. C. Jones, I. Farrer, D. A. Ritchie, M. –H. Bae, Y.-H. Ahn, M. Seo, Y. Chung, N. Kim, G. Yamahata, T. Karasawa, A. Fujiwara, R. Zhao, A. Rossi, F. E. Hudson, M. Möttönen, A. Dzurak, T. J. B. M. Janssen and M. Kataoka, The robustness and universality of tunable-barrier electron pumps , BIPM Workshop "The Quantum Revolution in Metrology" (September 28-29, 2017, Sèvres, France).

[254] (invited) Y. Takahashi, Takafumi Uchida, Atsushi Tsurumaki-Fukuchi, Masashi Arita, and Akira Fujiwara, Evaluation of Coupled Triple Quantum Dots with Compact Device Structure, The 232nd Electrochemical Society (ECS) Meeting, Oct. 1-6, 2017, National Harbor, USA)

[255] G. Yamahata, S. P. Giblin, M. Kataoka, T. Karasawa, and A. Fujiwara, Mechanism of single-electron pumping via a single-trap level in silicon, The International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2017) (Kanagawa, Japan , Nov. 13-17, 2017) .

[256] K. Chida, K. Nishiguchi, and A. Fujiawra, Power generation with Maxwell's demon in a silicon nanodevices, The International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2017) (Kanagawa, Japan , Nov. 13-17, 2017) .

[257] T. Yamaguchi, H. Tanaka, N. Clement, and A. Fujiwara, Coarse-grain molecular dynamics simulation of vertical lamellar phase of diblock copolymer in a thin film, The International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2017) (Kanagawa, Japan , Nov. 13-17, 2017) .

[258] J.Trasobares, J. Rech, T. Jonckheere, T. Martin, O. Aleveque, E. Levillain, V. Diez-Cabanes, Y. Olivier, J. Cornil, J. P. Nys, R. Sivakumarasamy, K. Smaali, P. Leclere, A. Fujiwara, D. Theron, D. Vuillaume, and N. Clement, Estimation of π–π Electronic Couplings from Current Measurements,

[259] J.Trasobares, J. Rech, T. Jonckheere, T. Martin, O. Aleveque, E. Levillain, V. Diez-Cabanes, Y. Olivier, J. Cornil, J. P. Nys, R. Sivakumarasamy, K. Smaali, P. Leclere, A. Fujiwara, D. Theron, D. Vuillaume, and N. Clement, Estimation of π–π Electronic Couplings from Current Measurements, The International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2017) (Kanagawa, Japan , Nov. 13-17, 2017) .

[260] J. Trasobares, J. Rech, T. Jonckheere, T. Martin, O. Aleveque, E. Levillain, V. Diez-Cabanes, Y. Olivier, J. Cornil, J.P. Nys, R. Sivakumarasamy, K. Smaali,P. Leclere, A. Fujiwara, D.Théron, D. Vuillaume and N. Clément, Nanodot-molecule junctions : assessing intermolecular interactions and electron transport at microwave frequencies with C-AFM and iSMM, MRS Spring meeting (April 2-6, 2018, Phoenix, Arizona).

[261] J. Trasobares, J. Rech, T. Jonckheere, T. Martin, O. Aleveque, E. Levillain, V. Diez-Cabanes, Y. Olivier, J. Cornil, J.P. Nys, R. Sivakumarasamy, K. Smaali, P. Leclere, A. Fujiwara, D. Théron, D. Vuillaume, and N. Cément, Estimation of π-π intermolecular interactions from C-AFM on sub-10 nm Au nanodot-molecule junctions, EMRS Spring meeting (June 18-22, 2018, Strasbourg, France).

[262] G. Yamahata, M. Kataoka, S. Ryu, H.-S. Sim, N. Johnson, and A. Fujiwara, Coherent oscillations of charge states in a Si single-electron pump, 2018 International Conference on Solid State Devices and Materials (SSDM) (Tokyo , 2-5 September, 2018).

[263] N. Johnson, G. Yamahata, and A. Fujiwara, Study of quantisation accuracy breakdown due to high temperature and high frequency in a silicon single-electron pump, 2018 International Conference on Solid State Devices and Materials (SSDM) (Tokyo , 2-5 September, 2018).

[264] C. Gerbelot, T. Yamaguchi, H. Tanaka, A. Fujiwara and N. Clement, Full Counting Statistics of Single Electron Transport in a Biological Motor, 2018 International Conference on Solid State Devices and Materials (SSDM) (Tokyo , 2-5 September, 2018).

[265] T. Hayashi, L. C. Duy, H. Murata, Y. Tokura, and A. Fujiwara, Low-frequency capacitance of hopping transport materials, 34th *International Conference on the Physics of Semiconductors (ICPS)* (July 29-August 3, 2018, Montpellier, France).

[266] (invited) K. Chida, K. Nishiguchi, and A. Fujiwara, Power generator driven by Maxwell's demon: Information-powered current in silicon single-electron devices, The International Symposium for Materials Scientists "Inspiration for Innovation by Interaction" (ISMS III) (Dec 3-4, 2018, Osaka, Japan).

[267] (invited) A. Fujiwara, G. Yamahata, K. Chida, and K. Nishiguchi, Tunable-barrier electron pump for quantum current standards and information-to-energy converters, China-Japan International Workshop on Quantum Technologies (QTech2018) (Aug 23-24, 2018, Hefei, China).

[268] (invited) A. Fujiwara, Ultimate electronics with silicon nanowire MOSFETs, Workshop on Innovative Nanoscale Devices and Systems (WINDS) (Nov. 25-30, 2018, Hawaii, USA)

[269] M. Razanoelina, H. Firdaus, Y. Takahashi, A. Fujiwara, and Y. Ono, Si electron nano-aspirator towards emerging hydro-electronics, 2019 Silicon Nanoelectronics Workshop (June 9-10, 2019, Kyoto, Japan).

[270] T. Hayashi, Y. Tokura, and A. Fujiwara, Voltage statistics of variable-range hopping transport, International Conference on Statistical Physics (StatPhys27) (July 8-12, 2019, Buenos Aires, Argentina).

[271] K. Nishiguchi and A. Fujiwara, Si-nanowire-FET sensor detecting high-frequency oscillation of a multilayer-graphene MEMS by means of reflectometry technique, 28th International Microprocesses and Nanotechnology Conference (MNC 2019), Hiroshima, Japan (Oct 28-31, 2019).

[272] R. Ohsugi, H. Omi1, Y. Krockenberger, and A. Fujiwara, Oxide driven spin filtering on silicon, 28th International Microprocesses and Nanotechnology Conference (MNC 2019), Hiroshima, Japan (Oct 28-31, 2019).

[273] (invited) Y. Takahashi, M. Shinohara, M. Arita, A. Tsurumaki-Fukuchi, A. Fujiwara, Y. Ono, K. Nishiguchi, and H. Inokawa, Characteristics of Si Single-Electron Transistor under Illumination, The 236th Electrochemical Society (ECS) Meeting, Oct. 13-17, 2019, Atlanta, USA)

[274] (invited) A. Fujiwara, Silicon nanodevices for metrology and sensor applications, IEEE Nanotechnology Materials and Devices Conference (IEEE NMDC2019) (Oct. 27-30, 2019, Stockholm, Sweden)

[275] G. Yamahata, S. Ryu, N. Johnson, H-S. Sim, A. Fujiwara, and M. Kataoka, Effective time-resolved detection of picosecond coherent dynamics in a Si dynamic quantum dot, The International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2019) (Kanagawa, Japan , Nov. 18-22, 2019) .

[276] N. Johnson, G. Yamahata, and A. Fujiwara, Observation of cooling in a dynamic quantum dot , The International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2019) (Kanagawa, Japan , Nov. 18-22, 2019) .

[277] R. Ohsugi, H. Omi, Y. Krockenberger, and A. Fujiwara, Tunneling properties of EuO/Si spin filter junctions, The International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2019) (Kanagawa, Japan , Nov. 18-22, 2019) .

[278] C. Gerbelot, I. Madrid, F. Cleri, T. Yamaguchi, H. Tanaka, C. Demaille, T. Fujii, A. Fujiwara and N. Clement, Q-Biol: A Quantum Bioelectrochemical Software Based on Single-electron Counting, The International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2019) (Kanagawa, Japan , Nov. 18-22, 2019) .

[279] I. Madrid, C. Gerbelot, T. Yamaguchi, T. Fujii, A. Fujiwara and N. Clement, Full Counting Statistics of Single-electron Transport in Redox-labeled DNA Motors, The International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2019) (Kanagawa, Japan , Nov. 18-22, 2019) .

[280] (invited) A. Fujiwara, G. Yamahata, N. Johnson, S. Ryu, H-S. Sim, and M. Kataoka, Fast electron dynamics in a silicon dynamic quantum dot, Int. Workshop on Cool Electrons in Flatlands (CEF2020) (June 15-24, 2020, Catania, Italy, held as virtual workshop)