

# 研究成果の発表状況

## 【論文】 21 件

- [1] # \* Y. Okazaki, T. Oe, M. Kawamura, R. Yoshimi, S. Nakamura, S. Takada, M. Mogi, K. Takahashi, A. Tsukazaki, M. Kawasaki, Y. Tokura, and N.-H. Kaneko, Precise resistance measurement of quantum anomalous Hall effect in magnetic heterostructure film of topological insulator, *Applied Physics Letters*, Accepted. 査読有
- [2] # \* K. Okawa, Y. Amagai, H. Fujiki, N.-H. Kaneko, N. Tsuchimine, H. Kaneko, Y. Tasaki, K. Ohata, M. Okajima, S. Nambu, Large-scalable fabrication of improved Bi-Te-based flexible thermoelectric modules using a semiconductor manufacturing process, *Japanese Journal of Applied Physics*, Accepted. 査読有
- [3] # \* Y. Amagai, M. Maruyama, H. Yamamori, T. Shimazaki, K. Okawa, H. Fujiki, N.-H. Kaneko, Extending voltage range to 10 V RMS in AC-DC difference measurements with AC programmable Josephson voltage standard, *Measurement Science and Technology*, Accepted. 査読有
- [4] ○ # \* D.-H. Chae, M.-S. Kim, W.-S. Kim, T. Oe, N.-H. Kaneko, Quantum mechanical current-to-voltage conversion with quantum Hall resistance array, *Metrologia* **57** 025004 (2020). 査読有
- [5] # \* 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). 査読有
- [6] ○• # \* 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). 査読有
- [7] ○ # \* 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). 査読有
- [8] ○ # \* 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). 査読有
- [9] \* 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). 査読有
- [10] # \* T. Oe, A. F. Rigos, M. Kruskopf, Bi-Yi Wu, Hsin-Yen Lee, Y. Yang, R. E. Elmquist, N.-H. Kaneko, D. G. Jarrett, Comparison between NIST Graphene and AIST GaAs Quantized Hall Devices, *IEEE Trans. Inst. Meas.*, Accepted, 2019/07, DOI: 10.1109/TIM.2019.2930436 査読有
- [11] # Takayuki Abe, Takehiko Oe, Masaya Kumagai, Matsuo Zama, and \* Nobu-Hisa Kaneko, Characterization of 1 k $\Omega$  Metal-Foil Standard Resistors and Continuing Drift-rate Evaluation of 1  $\Omega$  and 10  $\Omega$  Standard Resistors, *IEEE Trans. Inst. Meas.* **68**(6), 2078-2083 (2019). 査読有
- [12] \* Yasutaka Amagai, Hiroyuki Fujiki, Kenjiro Okawa, and Nobu-Hisa Kaneko, Low-Frequency AC-DC Differences of a Series-Parallel Circuit of Thermal Converters, *IEEE Trans. Inst. Meas.* **68**(6), 1907-1912 (2019). 査読有
- [13] \* G. Yu, D.-D. Xia, D. Pelc, R.-H. He, N.-H. Kaneko, T. Sasagawa, Y. Li, X. Zhao, N. Barišić, A. Shekhter, and M. Greven, Universal precursor of superconductivity in the cuprates, *Phys. Rev. B* **99**, 214502 (2019). 査読有
- [14] ○ # \* D.-H. Chae, W.-S. Kim, T. Oe and Nobu-Hisa Kaneko, Direct comparison of 1 M $\Omega$  quantized Hall array resistance and quantum Hall resistance standard, *Metrologia* **55**, 645-653 (2018). 査読有
- [15] \* Yasuhiro Fukuyama, Norihiko Sakamoto, Takaya Kondo, Jun Toyoizumi, Takahiro Yudate, and Nobu-Hisa Kaneko, Experimental Measurements of Constriction Resistance for Electrical Contacts

- Simulated Using Microfabrication, *IEEE Trans. Compon. Packag. Manuf. Technol.* **8**, 927-931 (2018). 査読有
- [16] # \* Shota Norimoto, Shuji Nakamura, Yuma Okazaki, Tomonori Arakawa, Kenichi Asano, Koji Onomitsu, Kensuke Kobayashi and Nobu-Hisa Kaneko, Fano effect in the transport of an artificial molecule *Physical Review B* **97**, 195313(8) (2018). 査読有
- [17] • # \* Yuma Okazaki, Imran Mahboob, Koji Onomitsu, Satoshi Sasaki, Shuji Nakamura, Nobu-Hisa Kaneko and Hiroshi Yamaguchi, Dynamical coupling between a nuclear spin ensemble and electromechanical phonons, *Nature Communications* **9**, 2993-1-8 (2018). 査読有
- [18] • # 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**, 48131-1-5 (2018). 査読有 (第11回応用物理学会シリコンテクノロジー分科会 論文賞)
- [19] \* 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**, 110304-1-4 (2018). 査読有
- [20] \* T. Hayashi, Y. Tokura, and A. Fujiwara, Field-dependent hopping conduction, *Physica B* **541**, 19-23 (2018). 査読有
- [21] # 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**, 163103-1-5 (2018). 査読有

## 【著書・解説記事】5件

- [1] 金子 晋久, “SI 定義改定と新しいアンペアの定義,” 環境と測定技術, Vol.46, No.5, pp.3-9, 2019/05
- [2] 金子 晋久, “アンペアの定義の変遷と電気素量に基づく定義がもたらす新たな計測技術,” 計測と制御 58巻5号 pp.341-348, 2019/05, <https://doi.org/10.11499/sicej1.58.341>
- [3] 金子 晋久, “電気標準の改定と今後,” 光技術コンタクト, 57-12, pp.28-36, 2019/12
- [4] 金子 晋久, “改定 SI における電気素量に基づく電流の定義とその応用,” はかる, 35-3, pp.10-13, 2019/01/01
- [5] 中村 秀司 “アンペア定義改定と単電子素子” 電気学会誌 vol 139, 6, 360 (2019)

## 【産業財産権等】2件

- [1] 中村秀司、岡崎雄馬、高田真太郎、金子晋久「酸化膜不純物準位を用いたパラメトリック増幅器」特願 2019-105439
- [2] 福山康弘、金子晋久、他「電気的接続部の劣化度合診断装置、及び、劣化度合診断方法」特願 2018-121874

## 【招待講演】14件

- [1] 金子 晋久, 電流の定義改定, 2020 年度精密工学会春季大会シンポジウム, 東京農工大学, 2020 年 3 月.
- [2] K .Nishiguchi, K. Chida, and A. Fujiwara, Control of thermal noise originating from single-electron Brownian motion, The 6th International Symposium toward the Future of Advanced Researches in Shizuoka University (ISFAR-SU 2020) (Mar. 5, 2020, Hamamatsu, Japan)
- [3] 金子晋久, 量子電気標準と量子センシングへの展望, 第 2 回合同シンポジウム「量子技術と資源循環技術の最前線」,理化学研究所主催, 2020 年 1 月
- [4] A. Fujiwara, Silicon nanodevices for metrology and sensor applications, IEEE Nanotechnology Materials and Devices Conference (IEEE NMDC2019) (Oct. 27-30, 2019, Stockholm, Sweden)
- [5] 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)
- [6] 金子晋久, Quantum Electrical Metrology and Revision of SI Units, 第 9 回半導体/超伝導体量子効果と量子情報の夏期研修会, 理化学研究所, 2019 年 9 月

- [7] 金子晋久, アンペアの定義改定がもたらす新しい量子電気標準, 第16回 AMO 討論会, 2019年6月
- [8] 金子晋久, 改定 SI と電気標準の進展, 電気学会精密周波数委員会, 2019年6月
- [9] 岡崎雄馬, 歪を介したメカニカル素子と核スピンの動的結合と計測応用, シンポジウム「量子センシング～究極の感度を求めて～」, 2019年第66回応用物理学会春季学術講演会、東工大、2019年3月
- [10] A. Fujiwara, Ultimate electronics with silicon nanowire MOSFETs, Workshop on Innovative Nanoscale Devices and Systems (WINDS) (Nov. 25-30, 2018, Hawaii, USA)
- [11] Y. Okazaki, Phonon-electron-nucluar spin hybrid system in an electromechanical resonator, 8th Summer School on Semiconductor/Superconductor Quantum Coherence Effect and Quantum Information (Sep. 4-6, 2018 Nasu, Japan)
- [12] 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).
- [13] 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).
- [14] N.-H. Kaneko, Development of 1 MΩ quantum Hall array and error modelling of wire and contact resistances, 30th International Symposium on Superconductivity, (Jun 27-29, 2018, Max Planck Institute for Solid State Research, Stuttgart, Germany).

## 【国際会議、学会などにおける発表（上記の招待講演除く）】

- [1] 渡邊拓磨, 水柿義直, 島田宏, フォノン照射による微小 Josephson 接合列の特性変化, 日本物理学会第75回年次大会, 2020年3月.
- [2] 松丸 大樹, Jia Zhengsen, 丸山 道隆, 金子 晋久, 量子メトロロジートライアングルに向けた差電圧トラッキング速度の検討, 2020年電子情報通信学会総合大会, 東広島市, 2020年3月.
- [3] Jia Zhengsen, 松丸 大樹, 丸山 道隆, 金子 晋久, Thermal Design of the PJVS Module for QMT Measurement, 2020年電子情報通信学会総合大会, 東広島市 2020年3月.
- [4] 松丸 大樹, Jia Zhengsen, 丸山 道隆, 金子 晋久, 量子メトロロジートライアングルにおける差電圧トラッキングのシミュレーション, 第67回応用物理学会春季学術講演会, 千代田区, 2020年3月.
- [5] T. Suzuki, G. M. Kanyolo, H. Nishigaki, Y. Mizugaki, and H. Shimada, Applicability of small Josephson junction arrays as radiation detectors, International Symposium on Hybrid Quantum Systems 2019 (Dec. 1-4, 2019, Matsue).
- [6] 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) .
- [7] N. Johnson, G. Yamahata, and A. Fujiwara, Observation of cooling in a dynamic quantum dot , International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2019) (Kanagawa, Japan , Nov. 18-22, 2019) .
- [8] R. Ohsugi, H. Omi, Y. Krockenberger, and A. Fujiwara, Tunneling properties of EuO/Si spin filter junctions, International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2019) (Kanagawa, Japan , Nov. 18-22, 2019) .
- [9] 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, International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2019) (Kanagawa, Japan , Nov. 18-22, 2019) .
- [10] 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, International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2019) (Kanagawa, Japan , Nov. 18-22, 2019) .

- [11] J. Tanarom and H. Shimada, Application of the Cooper-pair transistor as a supercurrent switch for superconducting circuits, International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2019) (Kanagawa, Japan , Nov. 18-22, 2019) **(Student Poster Award 受賞)**.
- [12] T. Watanabe, Y. Mizugaki, and H. Shimada, Long Range Current Correlation for Adjacent Small Josephson Junction Devices, International School and Symposium on Nanoscale Transport and phoTonics (ISNTT2019) (Kanagawa, Japan , Nov. 18-22, 2019).
- [13] 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).
- [14] 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).
- [15] シリコン単電子源におけるピコ秒電子ダイナミクス, 山端 元音, Sungguen Ryu, Nathan Johnson, H.-S. Sim, 藤原 聰, 片岡 真哉, 2019年第80回応用物理学会秋季学術講演会, 北海道大学, 2019年9月19日
- [16] Si electron nano-aspirator en-route for energy-efficient hydro-electronic devices, M. Razanoelina, H. Firdaus, T. Watanabe, M. Hori, D. Moraru, Y. Takahashi, A. Fujiwara, and. Y. Ono, 2019年第80回応用物理学会秋季学術講演会, 北海道大学, 2019年9月19日
- [17] 微小Josephson接合列の輻射検出器としての利用性の評価, 鈴木俊貴, Kanyolo Godwill Mbiti, 西垣宏志, 水柿義直, 島田宏, 2019年第80回応用物理学会秋季学術講演会, 北海道大学, 2019年9月.
- [18] 微小 Josephson 接合列の輻射検出器としての利用性の評価, 鈴木俊貴, カニヨロゴ・ドウウイリ・ビティ, 西垣宏志, 水柿義直, 島田宏, 電子情報通信学会 超伝導エレクトロニクス研究会, 産業技術総合研究所, 2019年8月 **(SCE 学生優秀発表賞受賞)**.
- [19] 三澤 哲郎, 福山 康弘, 中村 秀司, 岡崎 雄馬, 浦野 千春, 金子 晋久, コルビノ型デバイスによるトポロジカル絶縁体  $\text{Sn}_{0.02}\text{Bi}_{1.08}\text{Sb}_{0.9}\text{Te}_2\text{S}$  の表面伝導測定, 日本物理学会 2019年秋季大会, 岐阜大学, 2019年9月.
- [20] 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).
- [21] 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).
- [22] N.-H. Kaneko, T. Oe, Development of Standard Resistors, EURAMET DC-QM Meeting, (May 20-21, 2019 National Physical Laboratory, Teddington, UK)
- [23] 粗視化分子動力学シミュレーションによるブロック共重合体ラメラ相のグラフォエピタキシ, 山口徹, 田中弘隆, 藤原聰, 2019年第66回応用物理学会春季学術講演会, 東工大, 2019年3月9日
- [24] 原子層レベルで平滑な界面を有する EuO(111)/Si(111)スピンドルフィルター構造のスピンドル分裂, 大杉 廉人, 尾身 博雄, クロッケンバーガー ヨシハル, 藤原聰, 2019年第66回応用物理学会春季学術講演会, 東工大, 2019年3月10日
- [25] バリアブル・レンジ・ホッピング伝導による低周波キャパシタンス, 林稔晶, 都倉康弘, 藤原聰, 日本物理学会第74回年次大会, 九州大学, 2019年3月
- [26] 岡崎雄馬, 大江武彦, 中村秀司, 高田真太郎, 金子晋久, ホイートストンブリッジ回路による量子ホール抵抗値の精密比較測定系の構築, 日本物理学会第74回年次大会, 九州大学, 2019年3月
- [27] 三澤哲郎, 福山康弘, 中村秀司, 岡崎雄馬, 浦野千春, 金子晋久, トポロジカル絶縁体  $\text{Sn}_{0.02}\text{Bi}_{1.08}\text{Sb}_{0.9}\text{Te}_2\text{S}$  における表面電子輸送特性のゲート制御, 日本物理学会第74回年次大会, 九州大学, 2019年3月
- [28] 中村秀司, 岡崎雄馬, 高田真太郎, 金子晋久, 非線形超伝導共振器をもちいたパラメトリック增幅, 日本物理学会第74回年次大会, 九州大学, 2019年3月
- [29] G. M. Kanyolo, H. Shimada, The lifting of Coulomb Blockade by Alternating Voltages in

Small Josephson Junctions with Environment-based Renormalization Effects, 日本物理学会第 74 回年次大会, 九州大学, 2019 年 3 月

- [30] 村井飛天, 水柿義直, 島田宏, 強く容量結合した短い微小ジョセフソン接合列における電流誘引現象, 日本物理学会第 74 回年次大会, 九州大学, 2019 年 3 月
- [31] 岡崎雄馬, 大江武彦, 川村稔, 吉見龍太郎, 中村秀司, 高田真太郎, 茂木将孝, 高橋圭, 塚崎敦, 川崎雅司, 十倉好紀, 金子晋久, 磁性トポロジカル絶縁体 Cr(Bi,Sb)2Te3 における量子異常ホール効果の精密抵抗測定, 日本物理学会 2018 年秋季大会, 同志社大学(京都), 2018 年 9 月
- [32] 三澤哲郎, 福山康弘, 岡崎雄馬, 中村秀司, 名坂成昭, 金子晋久, 浦野千春, 笹川崇男, デュアルゲートデバイスによるトポロジカル絶縁体表面の磁気輸送特性制御, 第 79 回応用物理学会秋季学術講演会, 名古屋国際会議場(名古屋), 2018 年 9 月
- [33] 渡邊拓磨, 水柿義直, 島田宏, 微小ジョセフソン接合列の電流が引き起こす近接素子中の準粒子励起, 日本物理学会 2018 年秋季大会, 同志社大学, 2018 年 9 月
- [34] G. M. Kanylo, H. Nishigaki, Y. Mizugaki, and H. Shimada, The radio-frequency response of linear arrays of mesoscopic Josephson junctions, International Symposium on Frontiers of Quantum Transport in Nano Science (Nov. 7-10, 2018, Kashiwa)
- [35] T. Watanabe, Y. Mizugaki, and H. Shimada, Correltaion of currents in remote arrays of small Josephson junctions through the quasiparticle excitation, International Symposium on Frontiers of Quantum Transport in Nano Science (Nov. 7-10, 2018, Kashiwa)
- [36] Y. Okazaki, T. Oe, M. Kawamura, R. Yoshimi, S. Nakamura, S. Takada, M. Mogi, K. S. Takahashi, A. Tsukazaki, M. Kawasaki, Y. Tokura and N.-H. Kaneko, Precise transport measurements of the quantum anomalous Hall effect in Cr-doped (Bi,Sb)2Te3 magnetic topological insulator, 8th Summer School on Semiconductor/Superconductor Quantum Coherence Effect and Quantum Information (September 4-6, 2018 Nasu, Japan)
- [37] Y. Okazaki, T. Oe, M. Kawamura, R. Yoshimi, S. Nakamura, S. Takada, M. Mogi, K. S. Takahashi, A. Tsukazaki, M. Kawasaki, Y. Tokura and N.-H. Kaneko, Precise transport measurements of the quantum anomalous Hall effect in Cr-doped (Bi,Sb)2Te3 magnetic topological insulator, 10th International School and Conference on Physics and Applications of Spin Phenomena in Solids, Johannes Kepler Univ., (August 5-9, 2018 Linz, Austria)
- [38] Shota Norimoto, Shuji Nakamura, Yuma Okazaki, Tomonori Arakawa, Kenichi Asano, Koji Onomitsu, Kensuke Kobayashi, Nobu-Hisa Kaneko, Fano effect in the transport of an artificial molecule, 34th International Conference on the physics of semiconductors (July 29-August 3, 2018, Montpellier, France)
- [39] T. Hayashi, L. C. Duy, H. Murata, Y. Tokura, and A. Fujiwara, Low-frequency capacitance of hopping transport materials, 34<sup>th</sup> International Conference on the Physics of Semiconductors (ICPS) (July 29-August 3, 2018, Montpellier, France).
- [40] 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).
- [41] 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).
- [42] 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).
- [43] 大川 顕次郎, 天谷 康孝, 藤木 弘之, 金子 晋久, 交流ハーマン法を用いた熱電材料評価における熱損失の影響の実証, 第 15 回日本熱電学会学術講演会, 第 15 回日本熱電学会学術講演会 (TSJ2018), (東北大, 2018 年 9 月)
- [44] 大川 顕次郎, 天谷 康孝, 藤木 弘之, 金子 晋久, 田崎雄三, 大畠恵一, 岡嶋道夫, 南部修一郎, フレキシブル基板上にビスマス・テルル素子を実装した熱電モジュールの発電性能および耐久性の評価, 第 15 回日本熱電学会学術講演会 (TSJ2018), (東北大, 2018 年 9 月)

- [45] 高田 真太郎, 金子 晋久, 結合量子細線における単一飛行電子の制御, 日本物理学会秋季大会, (京都, 2018年9月)
- [46] 加藤陽通, 齊藤将司, 高橋康隆, 吉野國由, 堂前 篤志, 桐生昭吾, 金子 晋久, 直流大電流計測用シャント抵抗モジュールの開発, 2018年高速信号処理応用技術学会研究会, (東京, 2018年8月)
- [47] N.-H. Kaneko, H. Shibasaki, Y. Abe, I. Kimizuka, Y. Yamazaki, Y. Shinzawa, T. Yamaguchi and T. Oe, Inter Laboratory Comparison of High Resistance Standard in Japan, 2018 NCSLI Workshop & Symposium (August 27-30, 2018, Portland, Oregon USA).
- [48] M. Maruyama, N.-H. Kaneko, C. Urano, T. Yonezawa, T. Kanai, Y. Yoshino, Development of a Compact Zener DC Voltage Standard with a Detachable Module System, 2018 NCSLI Workshop & Symposium (August 27-30, 2018, Portland, Oregon USA).
- [49] 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. Leclerc, A. Fujiwara, D. Théron, D. Vuillaume, and N. Cément, Estimation of  $\pi$ - $\pi$  intermolecular interactions from C-AFM on sub-10 nm Au nanodot-molecule junctions, EMRS Spring meeting (June 18-22, 2018, Strasbourg, France).
- [50] T. Abe, T. Oe, M. Kumagai, M. Zama and \*N.-H. Kaneko, Characterization of Metal Thick-film Standard Resistors, Conference on Precision Electromagnetic Measurements 2018 (CPEM2018) (June 8-13, 2018, Paris, France).
- [51] T. Misawa, Y. Fukuyama, S. Nakamura, Y. Okazaki, N. Nasaka, T. Sasagawa, N.-H. Kaneko, Control of Top and Back Surface Conduction of a Topological Insulator by the Dual Gate Structure, Conference on Precision Electromagnetic Measurements 2018 (CPEM2018) (June 8-13, 2018, Paris, France).
- [52] M. Maruyama, C. Urano, N.-H. Kaneko, T. Yonezawa, T. Kanai, E. Sannoumaru, J. Honjo, Y. Yoshino, Investigation of Atmospheric-Pressure Dependence of Compact Detachable Zener Module, Conference on Precision Electromagnetic Measurements 2018 (CPEM2018) (June 8-13, 2018, Paris, France).
- [53] Y. Amagai, M. Maruyama, N. Sakamoto, T. Shimazaki, H. Yamamori, H. Fujiki, N.-H. Kaneko, Sampling Measurement of a 20-V RMS Sine Wave using an Inductive Voltage Divider and an AC-Programmable Josephson Voltage Standard, Conference on Precision Electromagnetic Measurements 2018 (CPEM2018) (June 8-13, 2018, Paris, France).
- [54] H. Kato, M. Saito, K. Yoshino, A. Domae, S. Kiryu, N.-H. Kaneko, Shunt module development for simple DC high-current measurements, Conference on Precision Electromagnetic Measurements 2018 (CPEM2018) (June 8-13, 2018, Paris, France).
- [55] T. Oe, G.M. Sucheta, T. Itatani, N.-H. Kaneko, 10 M $\Omega$  Quantum Hall Array Device, Conference on Precision Electromagnetic Measurements 2018 (CPEM2018) (June 8-13, 2018, Paris, France).
- [56] D.-H. Chae, W.-S. Kim, T. Oe, N.-H. Kaneko, Precision Measurement of 1 M $\Omega$  Quantum Hall Resistance Array, Conference on Precision Electromagnetic Measurements 2018 (CPEM2018) (June 8-13, 2018, Paris, France).
- [57] D.G. Jarrett, T. Oe, N.-H. Kaneko, S.U. Payagala, 10 T $\Omega$  and 100 T $\Omega$  Resistance Comparison between NIST and AIST, Conference on Precision Electromagnetic Measurements 2018 (CPEM2018) (June 8-13, 2018, Paris, France).
- [58] D.G. Jarrett, T. Oe, R.E. Elmquist, N.-H. Kaneko, A.F. Rigos, B.-Y. Wu, H.-Y. Lee, Y. Yang, Transport of NIST Graphene Quantized Hall Devices and Comparison with AIST Gallium-Arsenide Quantized Hall Devices, Conference on Precision Electromagnetic Measurements 2018 (CPEM2018) (June 8-13, 2018, Paris, France).
- [59] M. Maruyama, T. Shimazaki, Y. Amagai, H. Yamamori, N.-H. Kaneko, Observation of Solder Layers for PJVS Chips Formed with Supersonic-Soldering Method, Conference on Precision Electromagnetic Measurements 2018 (CPEM2018) (June 8-13, 2018, Paris, France).
- [60] Y. Fukuyama, N.-H. Kaneko, T. Kondo, J. Toyoizumi, Y. Ito, Evaluation of deterioration degree of electrical contacts with precise impedance measurement, Conference on

Precision Electromagnetic Measurements 2018 (CPEM2018) (June 8-13, 2018, Paris, France).

- [61] 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).