東北大学 電気通信研究所

研究室外部評価 参考資料

(2013 年度-2018 年度)

Research Laboratory Reference Data for External Review

April 2013 - March 2019
(FY.2013-2018)

Research Institute of Electrical Communication
Tohoku University

超ブロードバンド信号処理研究室

Ultra-Broadband Signal Processing

分野や研究室の事情に合わせて，エビデンスとなる資料を下の例に従ってまとめてください.

1. 研究成果 / Research Achievements

(1) 査読付学術論文（全 80 件） / Refereed journal papers

1. A. Satou, V. Ryzhii, Y. Kurita, and T. Otsuji, "Threshold of terahertz population inversion and negative dynamic conductivity in graphene under pulse photoexcitation," J. Appl. Phys., Vol. 113, Iss. 14, pp. 143108-1-7, April 2013. DOI: 10.1063/1.4801916 **[IF: 2.328 / 2.224 (five-year) by WOS (2018)] [Times Cited: 32]**
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3. V. Ryzhii, I. Semenikhin, M. Ryzhii, D. Svintsov, V. Vyurkov, A. Satou, and T. Otsuji, "Double injection in graphene p-i-n structures," J. Appl. Phys., Vol. 113, Iss. 24, pp. 244505-1-9, June 2013. DOI: 10.1063/1.4812494
4. M.-H. Jung, G.-H. Park, T. Yoshida, H. Fukidome, T. Suemitsu, T. Otsuji, and M. Suemitsu, "High-Performance Graphene Field-Effect Transistors with Extremely small access length using self-aligned source and drain technique," Proceedings of the IEEE, Vol. 101, pp. 1603-1608, 2013. **(Invited)** DOI: 10.1109/JPROC.2013.2258651
5. H. Fukidome, Y. Kawai, H. Handa, H. Hibino, H. Miyashita, M. Kotsugi, T. Ohkochi, M. Jung, T. Suemitsu, T. Kinoshita, T. Otsuji, and M. Suemitsu, "Site-selective epitaxy of graphene on Si wafers," Proceedings of the IEEE, Vol. 101, pp. 1557-1566, 2013. **(Invited)** DOI: 10.1109/JPROC.2013.2259131
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7. T. Watanabe, T. Fukushima, Y. Yabe, S.A. Boubanga Tombet, A. Satou, A.A. Dubinov, V. Ya Aleshkin, V. Mitin, V. Ryzhii, and T. Otsuji, "The gain enhancement effect of surface plasmon polaritons on terahertz stimulated emission in optically pumped monolayer graphene," New Journal of Physics, Vol. 15, Iss. 7, pp. 075003-1-11, July 2013. DOI:10.1088/1367-2630/15/7/075003 **[IF: 3.773 / 3.626 (five-year) by WOS (2018)] [Times Cited: 52]**
8. V. Ryzhii, A. Satou, T. Otsuji, M. Ryzhii, V. Mitin and M.S. Shur, "Dynamic effects in double graphene-layer structures with inter-layer resonant-tunneling negative conductivity," J. Phys. D: Appl. Phys., Vol. 46, Iss. 31, pp. 315107-1-6, July 2013. DOI: 10.1088/0022-3727/46/31/315107 **[IF: 2.829 / 2.868 (five-year) by WOS (2018)] [Times Cited: 38]**
9. V. Ryzhii, A.A. Dubinov, V.Ya. Aleshkin, M. Ryzhii, and T. Otsuji, "Injection terahertz laser using the resonant inter-layer radiative transitions in double-graphene-layer structure," Appl. Phys. Lett., Vol. 103, pp. 163507-1-4, Oct. 2013. DOI: 10.1063/1.4826113 **[IF: 3.521 / 3.352 (five-year) by WOS (2018)] [Times Cited: 30]**
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deposition," Jpn. J. Appl. Phys., Vol. 52, pp. 110123-1-11, Oct. 2013. DOI: 10.7567/JJAP.52.110123

11. V.V. Popov, O.V. Polischuk, S.A. Nikitov, V. Ryzhii, T. Otsuji and M.S. Shur, "Amplification and lasing of terahertz radiation by plasmons in graphene with a planar distributed Bragg resonator," Journal of Optics, Vol. 15, pp. 114009-1-8, Oct. 2013. DOI: 10.1088/2040-8978/15/11/114009
12. T. Otsuji, T. Watanabe, S.A. Boubanga Tombet, A. Satou, V. Ryzhii, V. Popov, and W. Knap, "Emission and detection of terahertz radiation using two-dimensional plasmons in semiconductor nanoheterostructures for nondestructive evaluations," Opt. Eng., Vol. 53, Iss. 3, pp. 031206-1-13, March 2014. doi: 10.1117/1.OE.53.3.031205 **(Invited)**
13. V. Ryzhii, A.A. Dubinov, T. Otsuji, V.Ya. Aleshkin, M. Ryzhii, and M. Shur, "Double-graphene-layer terahertz laser: concept, characteristics, and comparison," Opt. Express, Vol. 21, No. 25, pp. 31567-31577, Dec. 2013. DOI:10.1364/OE.21.031567 **[IF: 3.561 / 3.531 (five-year) by WOS (2018)] [Times Cited: 22]**
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(2) 原著論文と同等に扱う査読付国際会議発表論文（全 29 件） / Full papers in refereed conference proceedings equivalent to journal papers

1. T. Watanabe, A. Satou, T. Suemitsu, W. Knap. V.V. Popov, and T. Otsuji, "Plasmonic Terahertz Monochromatic Coherent Emission from an Asymmetric Chirped Dual-Grating-Gate InP-HEMT with a Photonic Vertical Cavities,"CLEO: Conference on Lasers and Electrooptics Dig., CW3K.7, San Jose, CA, USA, June 12, 2013.
2. A. Satou, V. Ryzhii, E.T. Vasko, V.V. Mitin, and T. Otsuji, "Frequency dispersion and damping mechanisms of terahertz plasmons in graphene transistor structure," CLEO: Conference on Lasers and Electrooptics Dig., JTh2A.33 San Jose, CA, USA, June 13, 2013.
3. T. Watanabe, Y. Kurita, A. Satou, T. Suemitsu, W. Knap, V. V. Popov, and T. Otsuji, "Plasmonic terahertz monochromatic coherent emission from an asymmetric chirped dual-grating-gate InP-HEMT with a photonic vertical cavity," Device Research Conference (DRC), 2013 71st Annual, pp. 129-130, Notre Dame, IN, USA, June 24, 2013. DOI: 10.1109/DRC.2013.6633827
4. T. Otsuji, T. Watanabe, S. Boubanga Tombet, A. Satou, A.A. Dubinov, V. Popov, and V. Ryzhii, "Graphene Active Plasmonics for Superradiant Terahertz Lasing," IRMMW-THz: International Conference on Infrared, Millimeter and Terahertz Waves, Mainz, Germany, Sept. 1-6, 2013. **(Plenary, Invited)**
5. Popov, V.V., Polischuk, O.V., Davoyan, A.R., Ryzhii, V., Otsuji, T., Shur, M.S., "Amplification of terahertz radiation by stimulated emission of plasmons in graphene," International Conference on Infrared, Millimeter, and Terahertz Waves, IRMMW-THz, Mainz, Germany, Sept. 1-6, 2013. DOI: 10.1109/IRMMW-THz.2013.6665560
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9. T. Otsuji, V.Y. Aleshkin, A.A. Dubinov, M. Ryzhii, V. Mitin, M.S Shur, and V. Ryzhii, "Terahertz emission and detection in double-graphene-layer structure," DRC: The 72nd Device Research Conference Dig., pp. 159-160, Santa Barbara, CA, USA, 23 June 2014. DOI: 10.1109/DRC.2014.6872346
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15. G. Tamamushi, T. Watanabe, A. Dubinov, H. Wako, A. Satou, T. Suemitsu, M. Ryzhii, V. Ryzhii, and T. Otsuji, "Current-injection terahertz lasing in distributed-feedback dual-gate graphene-channel field-effect transistor," CLEO: the 36th Conference on Lasers and Electro-Optics, SM3L.7, San Jose Convention Center, San Jose, CA, USA, 6 June 2016. DOI: 10.1364/CLEO_SI.2016.SM3L.7
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27. M. Suzuki, T. Hosotani, T. Otsuji, T. Suemitsu, Y. Takida, H. Ito, H. Minamide, and A. Satou, "Coupling of 2D plasmons in grating-gate plasmonic THz detector to THz wave with lateral polarization," IRMMW-THz: the 43rd International Conference on Infrared, Millimeter and Terahertz Waves Dig., Tu-A2-1a-2, Nagoya, Aichi, Japan, 9-14 Sept. 2018. DOI: 10.1109/IRMMW-THz.2018.8510281
28. S. Boubanga-Tombet, D. Yadav, W. Knap, V. Popov, and T. Otsuji, "Terahertz light amplification by instability-driven stimulated emission of graphene plasmon polaritons," IRMMW-THz: the 43rd International Conference on Infrared, Millimeter and Terahertz Waves Dig., Tu-A2-R2-5, Nagoya, Aichi, Japan, 9-14 Sept. 2018. DOI: 10.1109/IRMMW-THz.2018.8510241
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1. Akira Satou, Yuuki Kurita, Taiichi Otsuji and Victor Ryzhii, "Terahertz population inversion and negative dynamic conductivity in optically pumped graphene: dependence on pumping photon energy," OTST: International Conference on Optical Terahertz Science and Technology, W3B-6, Kyoto, Japan, April 2, 2013.
2. G. Ducournau, Y. Kurita, K. Kobayashi, Y. Zapart, J.-F. Lampin, and T. Otsuji, "Sub-THz scalar/vector imaging for objects inspection," OTST: International Conference on Optical Terahertz Science and Technology, W4-10, Kyoto, Japan, April 3, 2013.
3. D. Coquillat, Y. Kurita, K. Kobayashi, F. Teppe, N. Dyakonova, D. But, L. Tohme, P. Nouvel, St. Blin, J.Torres, A. Pénarier, T. Otsuji and W. Knap, "Sub-threshold attenuation of terahertz detection by asymmetric dual-grating gate HEMT structures," OTST: International Conference on Optical Terahertz Science and Technology, W4-15, Kyoto, Japan, April 3, 2013.
4. V. Ryzhii, T. Otsuji, M. Ryzhii, V. Mitin and M.S. Shur, "Terahertz detectors and photomixers based on double-graphene-layer structures utilizing plasma resonances," OTST: International Conference on Optical Terahertz Science and Technology, Th3-04, Kyoto, Japan, April 4, 2013.
5. T. Watanabe, A. Satou, T. Suemitsu, W. Knap, V. Popov and T. Otsuji, "Plasmonic terahertz monochromatic coherent emission from an asymmetric chirped dual-grating-gate InAlAs/InGaAs/InP HEMT with highly asymmetric resonant cavities," OTST: International Conference on Optical Terahertz Science and Technology, Th3-26, Kyoto, Japan, April 4, 2013.

6. Y. Kurita, G. Ducournau, K. Kobayashi, Y. Meziani, V. Popov, W. Knap, and T. Otsuji, "Ultrahigh sensitive terahertz detection by asymmetric dual-grating gate HEMT structure," OTST: International Conference on Optical Terahertz Science and Technology, F2B-3, Kyoto, Japan, April 5, 2013.
7. T. Otsuji, A. Satou, S.A. Boubanga Tombet, M. Ryzhii, V. Ryzhii, "Terahertz-wave generation using graphene -toward the creation of graphene injection lasers," OTST: International Conference on Optical Terahertz Science and Technology, F1B-1, Kyoto, Japan, April 1-5, 2013. **(Invited)**
8. D. Svintsov, V. Vyurkov, A. Orlikovsky, V. Ryzhii, and T. Otsuji, "All-Graphene Tunnel Field-Effect Transistor," the 7th International Workshop on "Functional Nanomaterials and Devices" and Second Ukrainian-French Seminar “Semiconductor-On-Insulator materials, devices and circuit technology and diagnostics," Kiev, Ukraine, 8-11 April 2013.
9. A. Satou, V. Ryzhii, T. Otsuji, M. Ryzhii, V. Mitin, and M.S. Shur, "Graphene terahertz lasers: injection versus optical pumping," GSMM: 6th Global Symposium on Millimeter-Waves, M4-5, Sendai, Japan, April 22, 2013.
10. T. Watanabe, Y. Kurita, S. Boubanga Tombet, T. Suemitsu, T. Otsuji, D. Coquillat, W. Knap, D. Fateev, V.V. Popov, H. Minamide, H. Ito, and Y. Meziani, "Asymmetric dual-grating gate InGaAs/InAlAs/InP HEMTs for ultrafast and ultrahigh sensitive terahertz detection," GSMM: 6th Global Symposium on Millimeter-Waves, M4-6, Sendai, Japan, April 22, 2013.
11. T. Otsuji, T. Watanabe, S. Boubanga Tombet, A. Satou, V. Ryzhii, V. Popov, and W. Knap, "Emission and detection of terahertz radiation using two dimensional plasmons in semiconductor nano-heterostructures for nondestructive evaluations," SPIE-DSS: SPIE Conf. on Defense, Security+Sensing, DS109 Conf. on “Multifunctional and Adaptive Structural Materials,” 8725-13, Baltimore, MD, USA, April 29 - May 3, 2013. **(Invited)**; Proc. SPIE, vol. 8725, pp. 87250F-1-16, May 2013. DOI: 10.1117/12.2015089
12. T. Otsuji, T. Watanabe, S. Satou, V. Popov, and V. Ryzhii, "Graphene active plasmonic metamaterials for new types of terahertz lasers," SPIE-DSS: SPIE Conf. on Defense, Security+Sensing, DS203 Conf. on “Terahertz Physics, Devices, and Systems VII: Advance Application in Industry and Defense,” 8716-24, Baltimore, MD, USA, April 29 - May 3, 2013. **(Invited)**; Proc. SPIE, vol. 8716, pp. 87160P-1-12, May 2013. DOI: 10.1117/12.2019717
13. T. Watanabe, A. Satou, T. Suemitsu, W. Knap. V.V. Popov, and T. Otsuji, "Plasmonic Terahertz Monochromatic Coherent Emission from an Asymmetric Chirped Dual-Grating-Gate InP-HEMT with Highly Asymmetric Resonant Cavities," ISCS: Int. Symp. on Coumpound Semiconductors, TuC4-5, Kobe, Japan, May 21-24, 2013.
14. T. Otsuji, T. Watanabe, S. Boubanga Tombet, T. Suemitsu, D. Coquillat, W. Knap. D. Fateev, and V. Popov, "Asymmetric dual-grating gate InGaAs/InAlAs/InP HEMTs for ultrafast and ultrahigh sensitive terahertz detection," IPRM: Int. Conf. on Indium Phosphide and Related Materials Prroc., ThD1-1, Kobe, Japan, May 23, 2013. **(Invited)** DOI: 10.1109/ICIPRM.2013.6562639
15. Y. Kurita, G. Ducournau, K. Kobayashi, Y.M. Meziani, V.V. Popov, W. Knap, and T. Otsuji, "Extremely-High Sensitive Terahertz Detector based on Dual-Grating Gate InP-HEMTs," IPRM:

Int. Conf. on Indium Phosphide and Related Materials Proc., ThD1-4, Kobe, Japan, May 23, 2013. DOI: 10.1109/ICIPRM.2013.6562642

16. T. Otsuji, "Active plasmons in grapheme: toward the new types of terahertz lasers," WOCSDICE: 37th Workshop on Compound Semiconductor Devices and Integrated Circuits held in Europe, Warnemünde, Germany, May 26-29, 2013. **(Invited)**
17. M. Ryzhii, M.S. Shur, V. Mitin, A. Satou, V. Ryzhii, and T. Otsuji, "Plasma Resonant Terahertz Photomixers Based on Double Graphene Layer Structures," RJUS-2013: the 2nd Russia-Japan-USA Symposium on the Fundamental and Applied Problems of Terahertz Devices and Technologies, BMSTU, Moscow, Russia, June 3-7, 2013; J. Phys.: Conf. Ser. Vol. 486, pp. 012032-1-4, 2014. DOI: 10.1088/1742-6596/486/1/012032
18. V.L. Semenenko, V.G. Leiman, A.V. Srsenin, V. Mitin, M. Ryzhii, T. Otsuji, and V. Ryzhii, "Self-consistent suface charges and electric field in p-i-n tunneing transit-time diodes based on single- and multiple-layer graphene structures,"RJUS-2013: the 2nd Russia-Japan-USA Symposium on the Fundamental and Applied Problems of Terahertz Devices and Technologies, BMSTU, Moscow, Russia, June 3-7, 2013; J. Phys.: Conf. Ser. Vol. 486, pp. 012011-1-2, 2014. DOI: 10.1088/1742-6596/486/1/012011
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198. T. Otsuji, "Emission and detection of terahertz radiation using graphene-based atomically-thin 2D heterostructures," MANA Int. Symp. Dig., pp. S2-2I-1-2, Tsukuba, Japan, March 5-7, 2018. **(Invited)**
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207. W. Knap, S. Boubanga-Tombet, D. Yadav, V. Popov, T. Otsuji, "Frequency-tunable terahertz light amplification by current-driven plasmon instabilities in graphene metamaterials," ICPS: 34th International Conference on the Physics of Semiconductors Dig., P1_114, Le Corum Palais des Congrès, Montpellier, France, 29 July - 3 Aug., 2018.
208. Juan Antonio Delgado Notario, Vito Cleric, Yahya Moubarak Meziani, Enrique Diez, Jesus Enrique Velazquez-Perez, Takashi Taniguchi, Kenji Watanabe, Deepika Yadav, Taiichi Otsuji, "Terahertz detection with asymmetric dual grating gate bilayer graphene field-effect-transistor," PIERS: Progress in Electromagnetics Research Symposium, 4A14-5I, Toyama, japan, 1-4 Aug., 2018. **(Invited)**
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215. T. Otsuji, D. Yadav, S. Boubanta-Tombet, T. Watanabe, A. Satou, A.A. Dubinov, M. Ryzhii, V.V. Popov, W. Knap, V. Mitin, M.S. Shur, and V. Ryzhii, "Emission and amplification of terahertz radiation using Dirac fermions and plasmons in graphene," RJUSE: the 7th Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of Terahertz Devices &

Technologies Book of Abstracts, Fri-2-3, pp. 128-129, CBF Nowy Swiat, Warsaw, Poland, 17-21 Sept. 2018. **(Invited)**

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221. A. Yachmenev, D. Lavrukhin, L. Glinskiy, R. Khabibullin, R. Galiev, A. Pavlov, Yu. Goncharov, I. Spektor, M. Ryzhii, T. Otsuji, K. Zaytsev, and D. Ponomarev, "Plasmonic terahertz emitters with high-aspect raio metal gratings," ICMNE-2018: International Conference on Nano- and Micro-Electronics Book of Abstracts, O2-16, p. 61, the Park-Hotel “Ershovo” in Zvenigorod, Moscow Region, Russia, 1-5 Oct. 2018. **(Invited)**
222. T. Otsuji, "Recent advances in 2D electronic and plasmonic terahertz devices based on graphene-based 2D materials," IMESS: IEEE International Microwave, Electron Devices, & Solid-State Circuit Symposium 2018, PSDC, Penang, Malaysia, Oct. 9-10, 2018. **(Invited)**
223. T. Otsuji, "Recent advances in 2D electronic terahertz devices based on graphene-based 2D materials," IEEE Distinguished Lecturer Programme, UniMAP, Perlis, Malaysia, Oct. 11, 2018. **(Invited)**
224. T. Otsuji, "Plasmon resonances in 2DEG and their applications to high-speed electron devices," IEEE EDS DL Public Lecture, IEEE EDS Japan Council Chapter, Ito Campus, Kyushu University, Fukuoka, Nov. 8, 2018. **(Invited)**

225. T. Otsuji, "Recent advances in 2D electronic and plasmonic terahertz devices utilizing graphenebased 2D materials," IEEE EDS Mini-Colloquium, Distinguished Lecture, IEEE Electron Device Society Spain Chapter, Hospederia Fonseca,Univ. Salamanca, Salamanca, Spain, Nov. 13, 2018. **(Invited)**
226. T. Otsuji, "Emission and detection of terahertz radiation in graphene - based 2D electron devices," 12th Spanish Conference on Electron Devices Abstracts, pp. 69-70, Hospederia Fonseca, Univ. Salamanca, Salamanca, Spain, Nov. 14-16, 2018. **(Invited, Plenary)**
227. T. Uchino, K. Shiga, K. Sugawara, H. Fukidome, A. Satou, and T. Otsuji, “Fabrication of Gate Tunable Graphene Lateral Tunnel Diodes,” 2018 MRS Fall Meeting Dig., NM01.07.16, Hynes Convention Center, Boston, MA, USA, Nov. 27, 2018.
228. D. Yadav, S. Boubanga-Tombet, G. Tamamushi, T. Watanabe, A. Satou, A. Dubinov, M. Ryzhii, V. Ryzhii, and T. Otsuji, "Terahertz current-driven plasmonic lasing and amplification," WINDS 18: International Workshop on Innovative Nanoscale Devices and Systems Book of Abstracts, p. 72, Westin Hapuna Beach Resort, Hawaii, USA, Nov. 25-29, 2018. **(Invited)**
229. T. Otsuji, "Graphene-based 2D-heterostructures for terahertz lasers and amplifiers," SPIE Photonics West, Conference 10917: Terahertz, RF, Millimeter, and Submillimeter-Wave Technology and Applications XII, 10917-15, San Fransisco, CA, USA, Feb. 5, 2019. **(Invited)**: [D. Yadav, S. Boubanga-Tombet, A. Satou, T. Tamamushi, T. Watanabe, T. Suemitsu, H. Fukidome, M. Suemitsu, A. A. Dubinov, V. V. Popov, M. Ryzhii, V. Mitin, M. S. Shur, V. Ryzhii, T. Otsuji, Proc. SPIE, vol. 10917, pp. 109170G-1-10, 2019. DOI: 10.1117/12.2516494]
230. T. Otsuji, "Graphene optoelectronics and plasmonics for terahertz device applications," The 2nd Internatioal Workshop on 2D Materials A3 Foresight Program Abstracts Book, PL-1, Nanjing University, Nanging, China, Feb. 21-23, 2019. **(Invited, Lecture)**
231. T. Watanabe, "Terahertz light emitting and lasing operation in graphene-based haterostructure 2D material systems," The 2nd Internatioal Workshop on 2D Materials A3 Foresight Program Abstracts Book, P-1, Nanjing University, Nanging, China, Feb. 21-23, 2019.
232. Deepika Yadav, Stephane Boubanga-Tombet, Alexander Dubinov, Victor Ryzhii, and Taiichi Otsuji, "Graphene-based van der Waals heterostructures towards a new type of quantum-cascade terahertz lasers," 1&2DM Conference and Exhibition, Tokyo Big-Site, Tokyo, Japan, Feb. 28, 2019. **(Invited, Keynote)**
233. V. Ryzhii and T. Otsuji, "Vertical Injection in black phophorus-graphene heterostructures for terahertz lasing," 1&2DM Conference and Exhibition, Tokyo Big-Site, Tokyo, Japan, Feb. 28, 2019.
234. D.V. Lavrukhin, A.E. Yachmenev, I.A. Glinskiy, R.A. Khabibullin, Y.G. Goncharov, M. Ryzhii, T. Otsuji, I.E. Spector, M. Shur, M. Skorobogatiy, K.I. Zaytsev, a and D.S. Ponomarev, "Terahertz photoconductive emitter with dielectricembedded high-aspect-ratio plasmonic grating for operation with low-power optical pumps," iWAT: the International Workshop on Antenna Technology 2019, Florida International University (FIU) at the Graham Center, Miami, FL, USA, March 3, 2019.

235. M. Suzuki, T. Hosotani, T. Suemitsu, Y. Takida, H. Ito, H. Minamide, T. Otsuji, and A. Satou, "Introduction of 2D nanoantennas to grating-gate plasmonic THz detector for controlling Its polarization characteristics," OTST: Optical Terahertz Science and Technology Dig., Tu-P-13 (1 page), Eldrado Hotel&Spa, Santa Fe, NM, USA, March 12, 2019.
236. P. Padmanabhan, S. Boubanga-Tombet, T. Otsuji, and R. Prasankumar, "Magnetoplasmonic manipulation of THz transmission and Faraday rotation using graphene micro-ribbon arrays," OTST: Optical Terahertz Science and Technology Dig., Tu-P-27 (1 page), Eldrado Hotel&Spa, Santa Fe, NM, USA, March 12, 2019.
237. A. Satou, Y. Omori, S. Manabe, T. Hosotani, K. Iwatsuki, and T. Otsuji, "Millimeter-wave photonic double-mixing by InGaAs-HEMTs for optical to wireless carrier frequency down-conversion," The 23rd International Symposium on Nanophysics and Nanoelectronics, Nizhny Novgorod, Russia, March 11-14, 2019. **(Invited)**
238. T. Otsuji, "Terahertz light emission and lasing in current-driven graphenebased 2D nano-structures," ISPlasma2019: 11th Int. Symp. on Advanced Plasma Science and its Applications for Nitrides and Nanomaterials, 18pC04I (2 pages), Nagoya Institute of Technology, Nagoya, Japan, March 18, 2019. **(Invited)**

(4) 査読なし国際会議・シンポジウム等 / Papers in conference proceedings
該当なし

(5) 総説・解説（全 9 件） / Review articles
1. 尾辻泰一, "グラフェンの超高周波光・電子デバイス応用" 材料の科学と工学, Vol. 50, No. 2, pp. 44-49, April 2014.
2. 尾辻泰一, "グラフェンの基礎とテラヘルツレーザー応用," 応用物理 Vol. 82, No. 12, pp. 1024-1029, Dec. 2014.
3. 尾辻泰一, "グラフェンの光電子物性とそのテラヘルツレーザー応用," 化学工業 Vol. 65, No. 4, pp. 58-64, March 2014. ISSN 0451-2014
4. 尾辻泰一, "グラフェンによるテラヘルツ光発生とレーザーへの応用," 光学, Vol. 48, No. 8, pp. 382-387, Aug. 2014.
5. T. Otsuji and M.S. Shur, "Terahertz plasmonics: good results and great expectations," IEEE Microwave Magazine, Vol. 15, Iss. 7, pp. 43-50, Nov-Dec. 2014. DOI: 10.1109/MMM.2014.2355712
6. 尾辻泰一, "テラヘルツ波検出技術の動向," 信学誌, Vol. 26, No. 11, pp. 931-937, Nov. 2014.
7. 尾辻泰一, "グラフェンの超高周波光電子デバイスへの応用," J. Vaccum Soc. Jpn., Vol. 57, No. 12, pp. 444-450, Dec. 2014. **(Invited)** DOI: 10.3131/jvsj2.57.444
8. 尾辻, "物質の五感を操り，機能を紡ぐ; 現代物理のキーワード: テラヘルツ波," 日本物理学会誌, vol. 71, no. 10, pp. 666-667, Oct. 2016.
9. 尾辻泰一, "プラズモン共鳴によるテラヘルツ波発生の物理とその光源素子への応用," レーザー研究, vol. 45, no. 12, pp. 746-751, Dec. 2017.

(6) 査読付国内会議 / Refereed proceedings in domestic conferences

該当なし

(7) 査読なし国内研究会・講演会（全 96 件） / Proceedings in domestic conferences

1. 佐藤昭, "グラフェンを用いた THz 波素子応用," 日本表面科学会 第 77 回表面科学研究会　日本真空学会 2013 年 5 月研究例会 「グラフェン応用実用デバイス研究の現状と課題」, 機械振興会館, 東京, May 9, 2013. **(Invited)**
2. 尾辻泰一, "グラフェンの光・電子デバイス応用－技術動向と将来展望－," エレクトロニクスシミュレーション・テラヘルツ応用システムワークショップ, 厚木, May 9, 2013. **(Invited)**
3. 佐藤昭, V. Ryzhii, V. Mitin, F. Vasko, 尾辻泰一, "グラフェンにおけるテラヘルツ二次元プラズモンのシミュレーションによる解析," 電子情報通信学会エレクトロニクスシミュレーション研究会(EST), 信学技報, vol. 113, no. 26, EST2013-4, pp. 15-20, May 10, 2013.
4. 尾辻泰一, "二次元プラズモンによるテラヘルツ波の発生と検出," 電気学会クラウド時代のユビキタス電子デバイス調査専門委員会, 法政大学, 小金井市, July 6, 2013. **(Invited)**
5. T. Otsuji, "Graphene plasmons and their applications to terahertz lasers," 32nd Electronic Materials Symposium, Th1-1, Biwa-ko, Shiga, Japan, July 11th, 2013. **(Invited)**
6. 尾辻, "グラフェン材料・デバイス技術の最前線と将来展望," TEL Advanced Technology Forum 2013 (東京エレクトロンフォーラム), 東京, Aug. 20, 2013. **(Invited)**
7. 尾辻泰一,"グラフェンエレクトロニクス," 第 74 回応用物理学会秋季学術講演会チュートリアル, 同志社大・京田辺キャンパス, Sept. 16, 2013. **(Invited)**
8. 鷹林, 楊, 林, ラデク, 小川, 尾辻, 高桑, "光電子制御プラズマ CVD 法による δ ドープダイヤモンドライクカーボン薄膜の作製," 第 74 回応用物理学会秋季学術講演会予稿集, 18a-B2-8, 同志社大・京田辺キャンパス, Sept. 18, 2013.
9. 佐藤 昭、ヴィクトール リズィー、尾辻 泰一, "二次元プラズモンの THz 波デバイス応用," 応用電子物性分科会研究例会, 首都大東京, Oct. 1, 2013.
10. 林広幸, 楊猛, 鷹林将, 小川修一, 尾辻泰一, 高桑雄二, "光電子制御プラズマ CVD による DLC 膜合成機構：タウンゼント放電とグロー放電の比較," 2013 年真空・表面科学合同講演会シンポジウム, 27Ep08, つくば, Nov. 27-28, 2013.
11. 尾辻泰一, "グラフェンの超高周波光電子デバイスへの応用," 2013 年真空・表面科学合同講演会シンポジウム, 28Ca04, つくば, Nov. 27-28, 2013. **(Invited)**
12. V. Ryzhii, A. Satou, M. Ryzhii, and T. Otsuji, "Novel concepts and technology for terahertz device applications using graphene," 信学会電子デバイス研究会, 信学技報, vol. 113, no. 357, ED2013-106, pp. 91-96, 仙台, Dec. 16-17, 2013. **(Invited)**
13. 川崎鉄哉, 畠山信也, 栗田裕記, Guillaume Ducournau, Dominique Coquillat, 小林健悟, 佐藤昭, Yahya M. Meziani, Vyacheslav. V. Popov, Wojciech Knap, 末光哲也, 尾辻泰一, "非対称二重回折格子状ゲート構造 HEMT による超高感度, および周波数選択性テラヘルツ波検出," 信学会電子デバイス研究会, 仙台, Dec. 16-17, 2013; 信学技報, Vol. 113, No. 357, pp. 97-100, Dec. 17, 2013.
14. 尾辻, "グラフェンテラヘルツレーザーの創出に向けて," 第９回 放射光表面科学研究部会 顕微ナノ材料科学研究会 合同シンポジウム, 仙台, Dec. 26-27, 2013. **(Invited)**

15. 尾辻, "光・無線融合ネットワークを実現する超高速光電子デバイス技術," 電子情報通信学会マイクロ波フォトニクス研究会, 研技報, Vol. 113, No. 393, pp. 221-226, 京都, Jan. 24, 2014. **(Invited)**
16. 菅原健太, 江藤隆紀, 川崎鉄哉, Mastura Hussin, 若生洋由希, 末光哲也, 尾辻泰一, 吾郷浩樹, 河原憲治, 深田陽一, 可児淳一, 寺田 純, 吉本直人, “グラフェンチャネル FET を用いたミリ波帯フォトミキサー,” 第 61 回応用物理学会春季学術講演会講演予稿集, 17a-E2-53, 神奈川, March 17-20, 2014.
17. 若生洋由希, 菅原健太, 栗田裕記, 川﨑鉄哉, 渡辺隆之, 佐藤 昭, ヴィクトール リズィー, 河原憲治, 吾郷浩樹, 尾辻泰一, “光学励起グラフェンにおけるテラヘルツ帯増幅自然放出,” 第 61 回応用物理学会春季学術講演会講演予稿集, 17p-E17-18, 神奈川, March 17-20, 2014.
18. 小関勇気, 佐藤 昭, Victor Ryzhii, Vladimir Vyurkov, 尾辻泰一, “グラフェンテラヘルツプラズモンのドープ基板表面プラズモンとの結合による減衰の解析,” 第 61 回応用物理学会春季学術講演会講演予稿集, 17p-E17-19, 神奈川, March 17-20, 2014.
19. 林 広幸, 鷹林 将, 楊 猛, 小川修一, 尾辻泰一, 高桑雄二, “光電子制御プラズマ CVD によるゲートスタック用 DLC の誘電率制御,” 第 61 回応用物理学会春季学術講演会講演予稿集, 18a-D8-1, 神奈川, March 17-20, 2014.
20. 畠山信也, 末光哲也, 尾辻泰一, 小林健悟, 吉田智洋, “InAlN/GaN HEMTs と AlGaN/GaN HEMTs における相互コンダクタンスの周波数分散,” 第 61 回応用物理学会春季学術講演会講演予稿集, 18p-PG3-10, 神奈川, March 17-20, 2014.
21. 小林健悟, 畠山信也, 吉田智洋, 矢部裕平, Daniell Piedra, Tomas Palacios, 尾辻泰一, 末光哲也, “多層 SiCN を用いて作製した傾斜型フィールドプレートによる AlGaN/GaN HEMT における電流コラプスの抑制,” 第 61 回応用物理学会春季学術講演会講演予稿集, 19a-D8-9, 神奈川, March 17-20, 2014.
22. 吉田智洋, 小林健悟, 畠山信也, 尾辻泰一, 末光哲也, “InGaAs-HEMT における寄生遅延時間への T 型ゲート高さの影響,” 第 61 回応用物理学会春季学術講演会講演予稿集, 20a-D8-10, 神奈川, March 17-20, 2014.
23. 板津太郎, 佐野栄一, 矢部裕平, 尾辻泰一, “テラヘルツ領域における金属メッシュ構造の反射特性,” 信学会 2014 総合大会講演論文集, C-10-5, 新潟, March 18-21, 2014.
24. 尾辻泰一, "半導体プラズモニック集積デバイス技術とそのテラヘルツセンシング応用," IEEE Sendai Section 主催 新 Fellow 記念講演会, 青葉記念会館, 東北大, 仙台, 16 April 2014. **(Invited)**
25. 尾辻泰一, "グラフェン・オン・シリコンのテラヘルツデバイス応用," 学振将来加工技術第 136 委員会第 3 回研究会, 麹町, 東京, 18 July 2014. **(Invited)**
26. 吉田智洋, 小山雅史, 渡邊邦彦, 楳田洋太郎, 尾辻泰一, 末光哲也, "F 級増幅器における InGaAs-HEMT ゲート寄生遅延時間の影響," 第 75 回応用物理学会秋季学術講演会 予稿集, 17a-A27-5, 札幌, 17 Sept. 2014.
27. Hussin Mastura, Kenta Sugawara, Tetsuya Suemitsu, Taiichi Otsuji, "An Improved Self-Aligned Ohmic-Contact Process for Graphene-Channel Field-Effect Transistors," 第 75 回応用物理学会秋季学術講演会 予稿集, JSAP-OSA Joint Symposia, 17p-C3-5, Sapporo, Japan, 17 Sept. 2014.

28. 鷹林将，林広幸，楊猛，小川修一，尾辻泰一，高桑雄二,"ダイヤモンドライクカーボン薄膜のラマン解析 (II): 電気特性との関係性," 第 75 回応用物理学会秋季学術講演会 予稿集, 18p-A8-13, 札幌, 18 Sept. 2014.
29. 鷹林将，林広幸，楊猛，小川修一，尾辻泰一，高桑雄二,"ダイヤモンドライクカーボン薄膜のラマン解析 (I): 関数解析について," 第 75 回応用物理学会秋季学術講演会 予稿集, 18p-A8-12，札幌, 18 Sept. 2014.
30. 鷹林将，林広幸，楊猛，小川修一，尾辻泰一，高桑雄二,"ダイヤモンドライクカーボン薄膜へのナノ制御ドーピング," 第 75 回応用物理学会秋季学術講演会 予稿集, 18p-A8-11，札幌, 18 Sept. 2014.
31. 畠山信也，小林健悟，吉田智洋，尾辻泰一，末光哲也, "傾斜型フィールドプレートを用いた AlGaN/GaN HEMTs の RF 特性," 第 75 回応用物理学会秋季学術講演会 予稿集, 19p-PB2-7，札幌, 19 Sept. 2014.
32. 尾辻泰一, "グラフェンを利用したプラズモニックテラヘルツデバイス技術の研究最前線," IEEE Electron Device Society 関西チャプター講演会・DL 講演会, 3 Oct. 2014. **(Invited)**
33. 尾辻泰一, "グラフェンおよび化合物半導体ヘテロ接合構造による二次元プラズモンを利用したテラヘルツ波の発生と検出," 防衛技術協会 光波・ミリ波センシング研究部会第 7 回報告会 シンポジウム発表資料, pp. 1-30，市ヶ谷，東京, 28 Nov. 2014. **(Invited)**
34. 川崎鉄哉，吉田智洋，菅原健太, Adrian Dobroiu，渡辺隆之，杉山弘樹，若生洋由希，可児淳一，寺田 純，桑野 茂，吾郷浩樹，河原憲次，岩月勝美，末光哲也，尾辻泰一, "InGaAs チャネル HEMT 及びグラフェンチャネル FET を用いたミリ波帯フォトミキシング," 信学会電子デバイス研究会，仙台, Dec. 22-23, 2014; 信学技報, Vol. 114, no. 387, ED2014-100, pp. 9-13, Dec. 23, 2014.
35. 板津太郎，佐野栄一，矢部裕平, Victor Ryzhii，尾辻泰一, "金属メッシュ付き単層グラフェンからの増幅されたテラヘルツ波放射," 信学会電子デバイス研究会，仙台，Dec. 22-23, 2013; 信学技報, Vol. 114, no. 387, ED2014-114, pp. 91-96, Dec. 23, 2014.
36. 佐藤昭，ステファン ボーバンガ トムベット，渡辺隆之，川崎鉄哉，デニス ファティエフ，ヴャチェスラフ ポポフ，南出泰亜，伊藤弘昌，ドミニク コキラ，ヴォイチェック クナップ，ギローム ドュコーナ，尾辻泰一, "非対称二重格子ゲート高電子移動度トランジスタを用いたプラズモニックテラヘルツ検出の広帯域特性," 信学会電子デバイス研究会，仙台，Dec. 22-23, 2013; 信学技報, Vol. 114, no. 387, ED2014-114, pp. 69-74, Dec. 23, 2014.
37. 板津太郎，佐野栄一，矢部裕平, Victor Ryzhii，尾辻泰一, "金属メッシュ付単層グラフェンによるテラヘルツ波放射," 信学会総合大会 予稿集, C10-12，草津，10 March 2015.
38. 佐藤 昭，尾辻泰一, "超高速テラヘルツ無線を支える光電子デバイス技術の動向," 信学会総合大会 予稿集, CI-3-8，草津，10 March 2015. **(Invited)**
39. 吉田 智洋，畠山 信也，安川 奈那，尾辻 泰一，末光 哲也, "SiCN 鋳型プロセスを用いた傾斜フィールドプレート構造を持つ InGaAs 系 HEMT の作製とその特性," 第 62 回応用物理学会春季学術講演会 予稿集， 11a-A21-5，平塚， 11 March 2015.
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93. 尾辻泰一, "グラフェンテラヘルツレーザーの創出," 第 14 回ナノカーボン先端技術交流会, 大宮ソニックシティ 4 階第 4 集会室, 大宮, 埼玉, Jan. 9. 2019. **(Invited)**
94. 志賀佳菜子, 菅原健太, 佐藤昭, 吹留博一, 尾辻泰一, 内野俊, "横型グラフェントンネルダイオードにおけるゲート電界効果の解析," 第 66 回応用物理学会春季学術講演会, 10a-W521-6, 東京工業大学大岡山キャンパス, 東京, March 9-12, 2019.
95. 眞鍋颯也, 尾辻泰一, 佐藤 昭, "二次元プラズモンを用いたテラヘルツ帯光-無線周波数下方変換の理論解析," 第 66 回応用物理学会春季学術講演会, 11a-S421-7, 東京工業大学大岡山キャンパス, 東京, March 9-12, 2019.
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(8) 著書（全 7 件） / Books

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2. W. Knap, D. B. But, N. Dyakonova, D. Coquillat, A. Gutin, O. Klimenko, S. Blin, F. Teppe, M.S. Shur, T. Nagatsuma, S.D. Ganichev, and T. Otsuji, “Recent Results on Broadband Nanotransistor Based THz Detectors” in NATO Science for Peace and Security Series B, Physics and Biophysics: THz and Security Applications, edited by C. Corsi, F. Sizov, (Springer, Dordrecht, Netherlands, 2014) pp.189 – 210, DOI: 10.1007/978-94-017-8828-1
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4. Kazuhiko Matsumoto Ed., Frontiers of Graphene and Carbon Nanotubes, K. Matumoto ed., Springer, Japan, March 2015. ISBN 978-4-431-55371-7 [T. Otsuji, “Graphene Terahertz Devices,” Part I, Chapt. 8, pp. 105-122. DOI: 10.1007/978-4-431-55372-4_8]

5. Ho-Jin Song, Tadao Nagatsuma Ed., Handbook of Terahertz Technologies: Devices and Applications, Pan Stanford Publishing, Singapore, 2015. ISBN: 978-981-4613-08-8 [T. Otsuji, "Chapt. 9: Plasma-wave devices for terahertz applications,"pp. 221-275.]
6. A. Korkin, S. Goodnick, R. Nemanich, Eds., Nanoscale Materials and Devices for Electronics, Photonics, and Solar Energy, Nanostructure Science and Technology, Springer, Switzerland 2015. ISBN: 978-3-319-18632-0 [T. Otsuji, V. Ryzhii, S. Boubanga Tombet, A. Satou, M. Ryzhii, V.V. Popov, W. Knap, V. Mitin, and M. Shur, "Terahertz wave generation using graphene and compound semiconductor nano-heterostructures," pp. 237-261.] DOI: 10.1007/978-3-319-18633-7_7
7. Shuo Tang and Daryosh Saeedkia eds., Advances in Imaging and Sensing [T. Otsuji and V. Ryzhii, Chapt. 1: "Theory and Experiments on THz Devices on Graphene," pp. 3-35.], CRC Press, FL, USA, 283 pages, 18 Oct. 2016. ISBN: 9781498714754

(9) 特許 / Patents

１．出願リスト / Patent filed

（全 3 件 / Total: 3）

発明の名称 Title of invention	発　明　者 Inventor	国内出願 Domestic filing	外国出願 Overseas filing	
		申請日 Date	申請日 Date	国　名 Country
「電力及び情報通信制御装置、及び複合ネットワークシステム」 特願 2018-167010	岩月勝美、尾辻泰一、京藤倫久	2018.9.6	——	——
「周波数可変フィルタ」 特願 2014-051925	可児淳一、深田陽一、寺田純、吉本直人、尾辻泰一、リズィーヴィクトール	2014.3.14	——	——
「相補型論理ゲート装置」 「Complementary Logic Gate Device」 特願　2008-192162	尾辻泰一、佐野栄一 T. Otsuji and E. Sano	2008.7.25	2009.7.24	PCT 加盟国 PCT

２．成立特許リスト / Patent awarded

（全 5 件 / Total: 5）

発明の名称 Title of invention	特許番号 Patent number	発明者 Inventor	登録日 Date	国　名 Country
「周波数可変フィルタ」 特願2014-051925	特許第6222734号	可児淳一、深田陽一、寺田純、吉本直人、尾辻泰一、リズィーヴィクトール	2017.10.13	日本 Japan
「テラヘルツ電磁波変換装置」 「Terahertz Electromagnetic Wave Conversion Device」	特許第5747420号 US 9,018,683 B2	尾辻泰一，ポポフヴィチェスラブ，クナップウ	2015.5.22 2015.4.28	日本 Japan 米国

ＰＣＴ／ＪＰ２０１０／００７０７４		ォイチェク，メチアーニヤーヤムバラク，ディアコノワニーナ，コキラドミニク，テッペフレデリク，ファティフデニス，ベラスケスペレスエススエンリケ T. Otsuji, V. Popov, W. Knap, Y.M. Meziani, N. Dyakonova, D. Coquillat, F. Teppe, D. Fateev, and E. Veraskes		USA
「テラヘルツ電磁波放射素子およびその製造方法」 「Terahertz Electromagnetic Wave Radiation Device and its Fabrication Method」	EP 1804347	尾辻泰一，佐野栄一 T. Otsuji and E. Sano	2014.1.1	欧州 ヨーロッパ
「相補型論理ゲート装置」 Complementary Logic Gate Device	特許第5424274号 China ZL 2009801281616 Korea 10-1549286	尾辻泰一、佐野栄一 T. Otsuji and E. Sano	2013.12.6 2013.8.28 2015.8.26	日本 Japan 中国 China 韓国 Korea
「電磁波放射素子」	特許第5268090号	尾辻泰一	2013.5.17	日本 Japan

(10) 招待講演 / Invited Talks

国際会議における招待講演（全 102 件）

講演者名	講演題目	シンポジウム等の名称、開催地	期日
Taiichi Otsuji	Terahertz-wave generation using graphene -toward the creation of graphene injection lasers	OTST: International Conference on Optical Terahertz Science and Technology, F1B-1, Kyoto, Japan	2013/04/05
Taiichi Otsuji	Emission and detection of terahertz radiation using two dimensional plasmons in semiconductor nano-heterostructures for nondestructive evaluations	SPIE-DSS: SPIE Conf. on Defense, Security+Sensing, DS109 Conf. on “Multifunctional and Adaptive Structural Materials,” 8725-13, Baltimore, MD, USA	2013/04/29

Taiichi Otsuji	Graphene active plasmonic metamaterials for new types of terahertz lasers	SPIE-DSS: SPIE Conf. on Defense, Security+Sensing, DS203 Conf. on “Terahertz Physics, Devices, and Systems VII: Advance Application in Industry and Defense,” 8716-24, Baltimore, MD, USA	2013/04/30
Taiichi Otsuji	Asymmetric dual-grating gate InGaAs/InAlAs/InP HEMTs for ultrafast and ultrahigh sensitive terahertz detection	IPRM: Int. Conf. on Indium Phosphide and Related Materials Prroc., ThD1-1, Kobe, Japan	2013/05/23
Taiichi Otsuji	Active plasmons in grapheme: toward the new types of terahertz lasers	WOCSDICE: 37th Workshop on Compound Semiconductor Devices and Integrated Circuits held in Europe, Warnemünde, Germany	2013/05/28
V. Ryzhii	Applied Problems of Terahertz Devices & Technologies	RJUS-2013: the 2nd Russia-Japan-USA Symposium on the Fundamental and Applied Problems of Terahertz Devices and Technologies, BMSTU, Moscow, Russia	2013/06/04
Taiichi Otsuji	Challenge to create graphene terahertz lasers	RJUS-2013: the 2nd Russia-Japan-USA Symposium on the Fundamental and Applied Problems of Terahertz Devices and Technologies, BMSTU, Moscow, Russia	2013/06/04
Taiichi Otsuji	Challenges to create graphene terahertz lasers	CC3DMR: Collaborative Conference on 3D & Materials Research Abstract, p. 659, Jeju, South Korea	2013/06/27
V. Ryzhii	Infrared and terahertz devices based on double-graphene-layer structures: Concepts, features, and comparison	Asian School-Conference on Physics and Technology of Nanostructured Materials Vladivostok, Russia	2013/08/27
Taiichi Otsuji	Plasmon-resonant terahertz emitters/detectors/modulators and their system applications	TWHM: Topical Workshop on Heterostructure Microelectronics, Hakodate, Japan	2013/09/03
Taiichi Otsuji	Graphene Active Plasmonics for Superradiant Terahertz Lasing	IRMMW-THz: International Conference on Infrared, Millimeter and Terahertz Waves, Mainz, Germany	2013/09/05
Taiichi Otsuji	Graphene active plasmons toward the new types of terahertz lasers	ICECom: 21st International Conference on Applied Electromagnetics and Communications Proc., Dubrovnik, Croatia	2013/10/15
Taiichi Otsuji	Graphene materials and devices for terahertz science and technology	APMC: Asia-Pacific Microwave Conference Proc., pp. 515-517, F2A-3, Seoul, Korea	2013/11/08
Taiichi Otsuji	Graphene active plasmonics for new types of terahertz lasers	WOFE: Workshop On Frontiers in Electronics, San Juan, Puerto Rico	2013/12/19
Taiichi Otsuji	Terahertz-wave Generation Using Graphene and Compound Semiconductor Nanoheterostructures	NGC: Int. Symp. on Nano and Giga Challenges in Electronics, Photonics and Renewable Energy, Phoenix, AZ, USA	2014/03/13

Taiichi Otsuji	Giant terahertz gain by excitation of surface plasmon polarities in optically pumped graphene	SPIE DSS: 2014 Sensing Technology + Applications, Conference ST105 on Terahertz Physics, Devices, and Systems VIII: Advanced Applications in Industry and Defense, Baltimore, MD	2014/05/08
V. Ryzhii	Graphene plasmonic heterostructures for lasing and detection of terahertz radiation	RJUS TeraTech-2014: The 3rd Russia-Japan-USA Symp. on Fundamental & Applied Problems of Terahertz Devices & Technologies Proc., S1-PT1, pp. 8-9, Buffalo, NY, USA	2014/06/18
Taiichi Otsuji	Recent advances in 2D electronic and plasmonic terahertz devices	RJUS TeraTech-2014: The 3rd Russia-Japan-USA Symp. on Fundamental & Applied Problems of Terahertz Devices & Technologies Proc., (IEEE EDS Distinguished Lecture), PL-1, pp. 11-12, Buffalo, NY, USA	2014/06/18
Taiichi Otsuji	Challenges to create graphene terahertz lasers	2nd Russia-Japan-USA Symposium on the Fundamental and Applied Problems of Terahertz Devices and Technologies, RJUS TeraTech 2013; Moscow; Russian Federation	2014/06/04
Akira Satou	Ultrahigh sensitive sub-terahertz plasmonic detector based on asymmetri ual-grating-gate HEMT	RJUS TeraTech-2014: The 3rd Russia-Japan-USA Symp. on Fundamental & Applied Problems of Terahertz Devices & Technologies Proc., S3-IT1, pp. 21-23, Buffalo, NY, USA	2014/06/20
Takayuki Watanabe	Plasmonic terahertz monochromatic coherent emission from an asymmetric chirped dual-grating-gate InP-HEMT with highly asymmetric resonant cavities	RJUS TeraTech-2014: The 3rd Russia-Japan-USA Symp. on Fundamental & Applied Problems of Terahertz Devices & Technologies Proc., S4-IT3, pp. 39-40, Buffalo, NY, USA	2014/06/20
Taiichi Otsuji	Graphene plasmonic heterostructures for terahertz device applications	16th Int. Conf. on Laser Optics 2014 Proc., Th-RB-36, St. Pertersburg, Russia	2014/07/03
Taiichi Otsuji	Graphene plasmonic heterostructures for new typse of terahertz lasers	SPIE Optics + Photonics 2014, Conf. 9199, Terahertz Emission, Detection and Applications V, 9199-14, San Diego, CA, USA	2014/08/17
V. Ryzhii	Concepts of double-graphene-layer terahertz plasmonic devices	ISGD: 4th International Symposium on Graphene Devices, A1.06, Seattle, USA	2014/09/22
Taiichi Otsuji	Giant Terahertz Gain by Excitation of Surface Plasmon Polaritons in Optically Pumped Graphene	ISGD: 4th International Symposium on Graphene Devices, A4.05, Seattle, USA	2014/09/25
V. Ryzhii	Graphene terahertz electronics and optoelectronics	ICMNE: Int. Conf. on Micro and Nano-Electronics, L2-03, Zvenigorod, Moscow Region, Russia	2014/10/08

S. Boubanga Tombet	Plasmon-resonant terahertz emitters and detectors and their system applications	ICMNE: Int. Conf. on Micro- and Nano-Electronics, L2-04, Zvenigorod, Moscow Region, Russia	2014/10/08
Taiichi Otsuji	Recent advances in the research toward graphenebased terahertz lasers	Indo-Japan Program on Graphene and Related Materials, JNCASR, Bangalore, India	2014/11/05
Taiichi Otsuji	Graphene heterostructures for current-injection terahertz lasing	TeraNano-V: The Fifth International Symposium on Terahertz Nanoscience, S12, 1530-1610, Martinique, Fort de France	2014/12/04
Taiichi Otsuji	Recent advances in the research toward graphene-based terahertz lasers	SPIE Photonics West, 9382-43, San Francisco, CA, USA	2015/3/10
Tetsuya Suemitsu	A New Process Approach for Slant Field Plates in GaN-Based HEMTs	7th Int. Symp. On Advanced Plasma Science and Its Applications for Nitrides and Nanomaterials, 14a-D7-2, Nagoya, Japan	2015/03/29
Taiichi Otsuji	Recent advances in graphene heterostructures toward the creation of terahertz lasers	Graphene 2015: 5th Edition of the European Conference in Graphene and 2D Materials, Imaginano Abstracts Book, p. 131, Bilbao, Spain	2015/03/13
Taiichi Otsuji	Graphene active plasmonics for terahertz device applications	SPIE Defense + Security, and Sensing Technology + Applications, Conference 9476 on Automatic Target Recognition XXV, 9476-39, Baltimore, MD, USA	2015/04/22
S. Boubanga Tombet	Emission and detection of THz radiation using graphene and III-V semiconductor heterostructures	CMOS-ETR: Int. Symp. On CMOS Emerging Technologies Research, O2-5, Vancouver, Canada	2015/05/20
Akira Satou	Computational study of graphene plasmons: damping mechanisms and instabilities	RJUS TeraTech-2015: The 4th Russia-Japan-USA Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies, No. 1.7, IMT, ISSP, Chernogolovka, Russia	2015/06/11
Taiichi Otsuji	Terahertz wave generation using graphene and III-V semiconductor heterostructures	RJUS TeraTech-2015: The 4th Russia-Japan-USA Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies, No. 1.6, IMT, ISSP, Chernogolovka, Russia	2015/06/11
S. Boubanga Tombet	Plasmon-resonant terahertz emitters and detectors and their system applications	2015-Collaborative Conference on 3D and Materials Research (CC3DMR) Proc., pp. 160-164, BEXCO, Busan, South Korea	2015/06/16
Taiichi Otsuji	Plasmonic terahertz emitters and detectors for sensing and wireless communications	Proc. PIERS 2015 in Prague: The 36th Progress in Electromagnetics Research Symposium, pp. 2247-2253, Prague, Czech Republic	2015/07/07
Taiichi Otsuji	Emission and detection of terahertz radiation using two-	META'15: The 6th International Conference on Metamaterials,	2015/08/04

	dimensional plasmonic metamaterials	Photonic Crystals and Plasmonics Proceedings, pp. 1319-1320, The City College of New York, New York, USA	
V. Ryzhii	Plasmonic enhancement of graphene heterostructure based terahertz detectors	META'15: The 6th International Conference on Metamaterials, Photonic Crystals and Plasmonics Proceedings, pp. 1323-1324, New York, USA	2015/08/04
S. Boubanga Tombet	Plasmon-resonant terahertz emitters and detectors and their system applications	Int. Conf. on Nanotechnology Congress & Expo Abstracts, T8-3, p. 79, Fleming's Conference Hotel, Frankfurt, Germany	2015/08/13
S. Boubanga Tombet	Emission and detection of terahertz radiation in double-graphene-layer van der Waals heterostructures	IRMMW-THz 2015: the 40th Int. Conf. on Infrared, Millimeter and Terahertz Waves Dig., H1D-1, The Chinese University of Hong Kong, Hong Kong, China	2015/08/27
Taiichi Otsuji	Graphene-based 2-dimensional materials for terahertz device applications	Optics - 2015: IX International Conference of Young Scientists and Specialists on Optics, St. Petersburg, Russia	2015/10/12
Taiichi Otsuji	Double-graphene-layer van der Waals heterostructures for terahertz device applications	MRS Fall Meeting, Symposium Q: Nano Carbon Materials -1D to 3D, Q5.06, Boston, MA, USA	2015/12/01
Taiichi Otsuji	Graphene-based van der Waals heterostructures for terahertz device applications	OPTIC 2015: the International Conference on Optics & Photonics Taiwan Proc., D6.S1-1, Taipei, Taiwan	2015/12/04
Taiichi Otsuji	Sub-THz photonic frequency conversion using optoelectronic transistors for future fully coherent access network systems	SPIE Photonics West, OPTO 2016, Conference 9772 on Broadband Access Communication Technologies X, Paper No. 9772-3, San Francisco, CA, USA	2016/02/16
Akira Satou	THz devices based on plasmons in 2D electron systems	XX International Symposium on Nanophysics & Nanoelectronics, Nizhny Novgorod, Russia	2016/03/15
Taiichi Otsuji	“Graphene-based van der Waals heterostructures for emission and detection of terahertz radiation	SPIE DCS: Int. Conf. on Defense + Commercial Sensing, Conference 9856 on Terahertz Physics, Devices, and Systems X: Advanced Applications in Industry and Defense, Paper No. 9856-5, Baltimore Convention Center, Baltimore, MD, USA	2016/04/17
Akira Satou	Plasmonic THz devices based on InP HEMTs and Graphene FETs	EMN Meeting on Terahertz Proc., p. C18, Donostia, San Sebastian, Spain	2016/05/16
Taiichi Otsuji	Emission and detection of terahertz radiation in graphene-based van der Waals heterostuctrues	EMN Meeting on Terahertz Proc., p. C38, Donostia, San Sebastian, Spain	2016/05/17
Taiichi Otsuji	Emission and detection of terahertz radiation using double-graphene-layered van der Waals heterostuctrues	CMOS-ETR: Int. Symp. on Emerging Technologies Research in Communications, Microsystems, Optoelectronics, and Sensors Proc., pp. C2-1-2,	2016/05/25

		Hotel Bonaventure Montréal, Montreal, Canada	
Taiichi Otsuji	Emission and detection of terahertz radiation in double-graphene-layered van der Waals heterostuctrues via photon-assisted plasmonic resonant tunneling	CIMTEC: International Conferences on Modern Materials & Technologies; General physical and chemical properties of Symposium F Graphene and Other Emerging 2D-layered Nanomaterials: Synthesis, Properties and Potential Applications Dig., p. F-1:IL07, Centro Congressi Hotel Quattrotorri at Best Western, Perugia, Italy	2016/06/08
Taiichi Otsuji	Graphene-based van der Waals heterostuctrue plasmonic metamaterials for terahertrz device applications	META 2016: 7th International Conference on Metamaterials, Photonic Crystals and Plasmonics Proc., pp. 181-182, Torremolinos Congress Center, Malaga, Spain	2016/07/25
S. Boubanga Tombet	Terahertz emission and detection in graphene-based heterostructures	Global Graphene Forum 2016 Proc., pp. W-II-I2-1-2, Mariella, Viking Line, Stockholm, Sweden	2016/08/24
Taiichi Otsuji	Graphene-based van der Waals heterostructures for terahertz device applications	IEEE NANO 2016: the 2016 IEEE 16th International Conference on Nanotechnology Dig., p. Tu3-2, Sendai International Conference Center, Sendai, Japan	2016/08/23
Taiichi Otsuji	Graphene-based 2D heterostructures for current-injection terahertz lasing	TERA NANO VII: the 7th Int. Symp. on Terahertz Nanoscience Dig., pp. S8-2-1-2, IGESA Center, Porquerolles, France	2016/10/04
V. Ryzhii	Detectors of infrared and terahertz radiation based on graphene-van der Waals heterostructures	ICMNE: Int. Conf. on Micro- and Nano-Electronics Dig., p. L2-03, The "Ershovo" resort, Zvenigorod, Moscow Region, Russia	2016/10/05
S. Boubanga Tombet	Emission and detection of terahertz radiation in graphene/hBN heterostructures	ICMNE: Int. Conf. on Micro- and Nano-Electronics Dig., p. L2-02, The "Ershovo" resort, Zvenigorod, Moscow Region, Russia	2016/10/05
Takayuki Watanabe	Current injection terahertz lasing in graphene-channel field-effect transistors under population inversion	ICMNE: Int. Conf. on Micro- and Nano-Electronics Dig., p. L2-01, The "Ershovo" resort, Zvenigorod, Moscow Region, Russia	2016/10/05
Taiichi Otsuji	Single-mode terahertz lasing in current-injection graphene-channel transistor	5th International Conference and Exhibition on Lasers, Optics & Photonics Proc., p. 40, Hilton Atlanta Airport, Atlanta, GA, USA	2016/11/29
Taiichi Otsuji	Current-injection terahertz lasing in graphene-channel field effect transistors	WINDS16: 2016 International Workshop on Innovative Nanoscale Devices and Systems Abstracts, p. 18, Big Island Hawaii, USA	2016/12/06
V. Ryzhii	Infrared and terahertz detectors based on	WINDS16: 2016 International Workshop on Innovative	2016/12/07

	graphene-van der Waals heterostructures	Nanoscale Devices and Systems Abstracts, p. 38, Big Island Hawaii, USA	
Taiichi Otsuji	Current-injection terahertz lasing in a distributed-feedback dual-gate graphene-channel transistor	SPIE OPTO: Conference on Quantum Sensing and Nano Electronics and Photonics XIV , 10111-77, San Fransisco, CA, USA	2017/02/01
Taiichi Otsuji	Current-injection terahertz lasing in graphene-based transistor lasers	ETCMOS: Int. Conf. on Emerging Technology on CMOS and Related Devices, B3-1, Hotel Sofitel Warsaw Victoria, Warsaw, Poland	2017/05/29
Akira Satou	MMW Photonic Double-Mixing and THz Plasmonic Detection Using InP HEMTs	Global Symposium on Lasers, Optics, and Photonics, Valencia, Spain	2017/06/19
V. Ryzhii	Graphene-based heterostructures: Device concepts and prospects	The 25th International Symposium “Nanostructures: Physics and Technology”, GRN.02i, St. Petersburg, Russia	2017/06/28
Taiichi Otsuji	Terahertz light emission in graphene-based active plasmonic metamaterial heterostructures	META'17: the 8th International Conference on Metamaterials, Photonic Crystals and Plasmonics Abstract Book, Paper ID: SP22.I2, Incheon, Korea	2017/07/25
Akira Satou	Millimeter-wave/terahertz detection and photonic double-mixing by transistors	SPIE OPTO+ Photonics, Conference on Infrared Remote Sensing and Instrumentation XXV, 104003-27, San Diego Convention Center, San Diego, CA, USA	2017/08/08
Taiichi Otsuji	Broadband terahertz light emission and lasing in graphene-based van der Waals heterostructures	EMN: Energy Materials Nanotechnology Lyon Meeting on 2D Materials Dig., pp. 42-44, Lyon, France	2017/08/10
D. Yadav	Terahertz light emitting transistor based on current inection dual-gate graphene-channel FET	IRMMW-THz: 42nd International Conference on Infrared, Millimeter and Terahertz Waves Dig., WB3.5, Cancun, Quintana Roo, Mexco	2017/08/30
Taiichi Otsuji	Terahertz light emission and lasing in graphene-based heterostructure 2D material systems -theory and experiments	NANOP 2017: International Conference on Nanophotonics and Micro/Nano Optics Abstract Book, pp. 115-116, Barcelona, Spain	2017/09/14
Taiichi Otsuji	Terahertz light emission and lasing in graphene-based vdW 2D heterostructures	RPGR2017: Int. Conf. Recent Progress in Graphene and 2D Materials Research, Singapore	2017/09/20
Taiichi Otsuji	Terahertz light emission and lasing in graphene transistors under current-injection pumping	RJUSE TeraTech 2017: Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies Dig., I-P2 (1 pages), Rensselaer Polytechnic Institute, Troy, NY, USA	2017/10/02
Taiichi Otsuji	Terahertz Light Emission and Lasing in Graphene-Based 2D Heterostructures	RIEC International Symposium on Photonics and Optical Communications 2017 (ISPOC	2017/10/25

		2017) Dig., (a page), Sendai, Japan	
Taiichi Otsuji	Terahertz light emission and lasing in graphene transisters under current-injection pumping	MTSA2017-CTOXMAND-TeraNano-8 Dig., p. WeA1-I2-1-2, Okayama, Japan	2017/11/22
Taiichi Otsuji	Terahertz light emission and lasing in graphene-based van der Waals 2D heterostructures	WINDS17: 16: 2017 International Workshop on Innovative Nanoscale Devices and Systems Abstracts, S3-3 (2 pages), Big Island Hawaii, USA	2017/11/28
V. Ryzhii	Concepts of infrared and terahertz photodetectors based on van der Waals heterostructures with graphene layers	WINDS17: 2017 International Workshop on Innovative Nanoscale Devices and Systems Abstracts, S3-2 (2 pages), Big Island Hawaii, USA	2017/11/28
Taiichi Otsuji	Graphene-based 2D materials -their physics and technology to create terahertz lasers	Energy Colloquium, SKOLTECH, Skolkovo, Moscow Region, Russia	2018/02/27
Taiichi Otsuji	Emission and detection of terahertz radiation using graphene-based atomically-thin 2D heterostructures	MANA Int. Symp. Dig., pp. S2-2I-1-2, Tsukuba, Japan	2018/03/06
Taiichi Otsuji	Terahertz light emission and lasing in graphene-based van der Waals 2D heterostructures	XXII International Symposium on Nanophysics and Nanoelectronics Dig., pp. 6A-I1-1-2, Niznhy Novgorod, Russia	2018/03/16
Taiichi Otsuji	Terahertz light emission and lasing in current-injection graphene-channel transistors	2nd Edition of Graphene & Semiconductors | Diamond, Graphite & Carbon Materials Conference Abstracts, p. 43, Las Vegas, NV, USA	2018/04/16
Taiichi Otsuji	Terahertz light emission and lasing in graphene-based vdW 2D heterostructures	Journal of Nanomaterials & Molecular Nanotechnology [Proc. of the 24th World Nano Conference, Black Hotel Rome, Rome, Italy	2018/05/07
Taiichi Otsuji	Graphene-based 2D heterostructure materials for terahertz photonics and plasmonics light-sources applications	2nd Global Summit & Expo on Laser Optics & Photonics 2018 Dig., pp. 1-2, Rome, Italy	2018/06/15
Taiichi Otsuji	Terahertz light emission and lasing in graphene under current-injection pumping	European Conf. on Lasers, Optics and Photonics, Dig., p. 18, Prague, Czech Republic	2018/07/16
V. Ryzhii	Comparison of infrared and terahertz photodetectors based on graphene, CdHgTe, and A3B5 quantumwell heterostructures	PIERS: Progress in Electromagnetics Research Symposium, 4P14a-2I, Toyama, japan	2018/08/04
Akira Satou	THz devices based on transistors incorporated with 2D plasmonic metamaterial structures	A3 Metamaterials Forum 2018, I18, POSTECH, Korea	2018/08/14
Akira Satou	Carrier frequency down-conversion from optical to MMW/THz data signal using InGaAs-HEMT	RJUSE: the 7th Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of Terahertz Devices &	2018/09/19

		Technologies Book of Abstracts, Wed-2-2, pp. 70-72, CBF Nowy Swiat, Warsaw, Poland	
Taiichi Otsuji	Emission and amplification of terahertz radiation using Dirac fermions and plasmons in graphene	RJUSE: the 7th Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies Book of Abstracts, Fri-2-3, pp. 128-129, CBF Nowy Swiat, Warsaw, Poland	2018/09/21
Taiichi Otsuji	Graphene-based 2D heterostructures for terahertz photonic and plasmonic light-sources applications	ICMNE-2018: International Conference on Nano- and Micro-Electronics Book of Abstracts, L2-01, p. 42, the Park-Hotel “Ershovo” in Zvenigorod, Moscow Region, Russia	2018/10/03
V. Ryzhii	Graphene-phosphorene hybrid structures and their applications	ICMNE-2018: International Conference on Nano- and Micro-Electronics Book of Abstracts, L2-02, p. 43, the Park-Hotel “Ershovo” in Zvenigorod, Moscow Region, Russia	2018/10/03
Akira Satou	Photonic double-mixing by InGas-HEMTs for optical to MMW-THz carrier frequency down-conversion	ICMNE-2018: International Conference on Nano- and Micro-Electronics Book of Abstracts, L2-03, p. 44, the Park-Hotel “Ershovo” in Zvenigorod, Moscow Region, Russia	2018/10/03
Taiichi Otsuji	Recent advances in 2D electronic and plasmonic terahertz devices based on graphene-based 2D materials	IMESS: IEEE International Microwave, Electron Devices, & Solid-State Circuit Symposium 2018, PSDC, Penang, Malaysia	2018/10/10
Taiichi Otsuji	Recent advances in 2D electronic terahertz devices based on graphene-based 2D materials	IEEE Distinguished Lecturer Programme, UniMAP, Perlis, Malaysia	2018/10/11
Taiichi Otsuji	Plasmon resonances in 2DEG and their applications to high-speed electron devices	IEEE EDS DL Public Lecture, IEEE EDS Japan Council Chapter, Ito Campus, Kyushu University, Fukuoka	2018/11/08
Taiichi Otsuji	Recent advances in 2D electronic and plasmonic terahertz devices utilizing graphenebased 2D materials	IEEE EDS Mini-Colloquium, Distinguished Lecture, IEEE Electron Device Society Spain Chapter, Hospederia Fonseca,Univ. Salamanca, Salamanca, Spain	2018/11/13
Taiichi Otsuji	Emission and detection of terahertz radiation in graphene - based 2D electron devices	12th Spanish Conference on Electron Devices Abstracts, pp. 69-70, Hospederia Fonseca,Univ. Salamanca, Salamanca, Spain	2018/11/15
Taiichi Otsuji	Terahertz current-driven plasmonic lasing and amplification	WINDS 18: International Workshop on Innovative Nanoscale Devices and Systems Book of Abstracts, p. 72, Westin Hapuna Beach Resort, Hawaii, USA	2018/11/28
Taiichi Otsuji	Graphene-based 2D-heterostructures for terahertz lasers and amplifiers	SPIE Photonics West, Conference 10917: Terahertz, RF, Millimeter, and	2019/02/05

		Submillimeter-Wave Technology and Applications XII, 10917-15, San Fransisco, CA, USA	
Taiichi Otsuji	Graphene optoelectronics and plasmonics for terahertz device applications	The 2nd Internatioal Workshop on 2D Materials A3 Foresight Program Abstracts Book, PL-1, Nanjing University, Nanging, China	2019/02/21
Taiichi Otsuji	Graphene-based van der Waals heterostructures towards a new type of quantum-cascade terahertz lasers	1&2DM Conference and Exhibition, Tokyo Big-Site, Tokyo, Japan	2019/2/29
Akira Satou	Millimeter-wave photonic double-mixing by InGaAs-HEMTs for optical to wireless carrier frequency down-conversion	The 23rd International Symposium on Nanophysics and Nanoelectronics, Nizhny Novgorod, Russia	2019/03/14
Taiichi Otsuji	Terahertz light emission and lasing in current-driven graphenebased 2D nano-structures	ISPlasma2019: 11th Int. Symp. on Advanced Plasma Science and its Applications for Nitrides and Nanomaterials, 18pC04I (2 pages), Nagoya Institute of Technology, Nagoya, Japan	2019/03/18

国内学会における招待講演（全 26 件）

講演者名	講演題目	シンポジウム等の名称、開催地	期日
佐藤昭	グラフェンを用いた THz 波素子応用	日本表面科学会 第 77 回表面科学研究会 日本真空学会 2013 年 5 月研究例会 「グラフェン応用実用デバイス研究の現状と課題」, 機械振興会館, 東京	2013/05/09
尾辻泰一	グラフェンの光・電子デバイス応用－技術動向と将来展望－	エレクトロニクスシミュレーション・テラヘルツ応用システムワークショップ, 厚木	2013/05/09
尾辻泰一	二次元プラズモンによるテラヘルツ波の発生と検出	電気学会クラウド時代のユビキタス電子デバイス調査専門委員会, 法政大学, 小金井市	2013/07/06
Taiichi Otsuji	Graphene plasmons and their applications to terahertz lasers	32nd Electronic Materials Symposium, Th1-1, Biwa-ko, Shiga, Japan	2013/07/11
尾辻泰一	グラフェン材料・デバイス技術の最前線と将来展望	TEL Advanced Technology Forum 2013 (東京エレクトロンフォーラム), 東京	2013/08/20
尾辻泰一	グラフェンエレクトロニクス	第 74 回応用物理学会秋季学術講演会チュートリアル, 同志社大・京田辺キャンパス	2013/09/16
尾辻泰一	グラフェンの超高周波光電子デバイスへの応用	2013 年真空・表面科学合同講演会シンポジウム, 28Ca04, つくば	2013/11/28
V. Ryzhii	Novel concepts and technology for terahertz device applications using graphene	信学会電子デバイス研究会, 信学技報, vol. 113, no. 357, ED2013-106, pp. 91-96, 仙台	2013/12/17
尾辻泰一	グラフェンテラヘルツレーザーの創出に向けて	第９回 放射光表面科学研究部会 顕微ナノ材料科学研究会 合同シンポジウム, 仙台	2013/12/26

尾辻泰一	光・無線融合ネットワークを実現する超高速光電子デバイス技術	電子情報通信学会マイクロ波フォトニクス研究会，研技報, Vol. 113, No. 393, pp. 221-226，京都	2014/01/24
尾辻泰一	半導体プラズモニック集積デバイス技術とそのテラヘルツセンシング応用	IEEE Sendai Section 主催 新 Fellow 記念講演会，青葉記念会館，東北大，仙台	2014/04/16
尾辻泰一	グラフェン･オン･シリコンのテラヘルツデバイス応用	学振将来加工技術第 136 委員会第 3 回研究会，麹町，東京	2014/07/18
尾辻泰一	グラフェンを利用したプラズモニックテラヘルツデバイス技術の研究最前線	IEEE Electron Device Society 関西チャプター講演会・DL 講演会	2014/10/03
尾辻泰一	グラフェンおよび化合物半導体ヘテロ接合構造による二次元プラズモンを利用したテラヘルツ波の発生と検出	防衛技術協会 光波・ミリ波センシング研究部会第 7 回報告会 シンポジウム発表資料，pp. 1-30，市ヶ谷，東京	2014/11/28
佐藤　昭	超高速テラヘルツ無線を支える光電子デバイス技術の動向	信学会総合大会 予稿集, CI-3-8，草津	2015/03/10
尾辻泰一	グラフェンを中心とする二次元原子薄膜ヘテロ構造とそのテラヘルツデバイス応用	ニューダイヤモンドフォーラム平成２７年度第１回研究会，東大駒場キャンパス，東京	2015/07/23
尾辻泰一	二次元原子薄膜ヘテロ接合の複合量子物性とそのテラヘルツ帯光源デバイスへの応用	JEITA 電子材料･デバイス技術専門委員会量子現象利用デバイス分科会講演会，大手センタービル，東京	2016/01/28
尾辻泰一	グラフェンテラヘルツレーザーの創出	シンポジウム「テラヘルツ科学の最先端 III」，三国観光ホテル，芦原温泉，福井	2016/11/24
尾辻泰一	グラフェンテラヘルツレーザーの創出に関する研究	レーザー学会学術講演会第 37 回年次大会，B.07aV-1，富山大学	2017/01/07
尾辻泰一	グラフェンによる電流注入型テラヘルツレーザートランジスターの開発	日本学術振興会テラヘルツ波科学技術と産業開拓第 182 委員会 第 31 回研究会，大阪大学医学・工学研究科東京ブランチ，東京	2017/04/19
尾辻泰一	二次元原子薄膜ヘテロ接合の創製とその新原理テラヘルツ光電子デバイス応用	2017 年 第 78 回応用物理学会秋季学術講演会予稿集, 6p-C16-1 (1 page)，福岡国際会議場，福岡	2017/09/06
Taiichi Otsuji	Plasmon resonances in 2DEG and their applications to high-speed electron devices	IEEE-EDS Distinguished Lecture, IEEE-EDS Japan Joint Chapter, Kyushu Univ. Ito Campus	2017/12/14
Taiichi Otsuji	Recent advances in 2D electronic and plasmonic terahertz devices based on graphene-based 2D materials	IEEE-EDS Distinguished Lecture, IEEE-EDS Japan Joint Chapter, RIEC, Tohoku Univ. Katahira Campus	2017/12/18
尾辻泰一	二次元プラズモン共鳴現象を用いたテラヘルツ素子の先駆的研究	応用物理学会テラヘルツ電磁波技術研究会第 1 回研究討論会「テラヘルツ波･高周波のデバイス・センシングの研究開発と応用」，JR 博多シティ 10F 会議室，福岡	2018/11/07
尾辻泰一	グラフェンを利得媒質とするテラヘルツレーザー・増幅デバイス技術	URSI-C 小委員会 第 24 期 第 3 回公開研究会，秋保温泉 緑水亭，仙台	2018/12/14

尾辻泰一	グラフェンテラヘルツレーザーの創出	第 14 回ナノカーボン先端技術交流会，大宮ソニックシティ 4 階第 4 集会室，大宮，埼玉	2019/01/09

2. 学会活動 / Activities in academic societies

(1) 学会役員等の活動 / Activities on committees of academic societies

氏名 Name	組織名・役職名 Organization/post	期　間 Year	活　動　内　容 Nature of activity
尾辻　泰一 Taiichi Otsuji	電子情報通信学会エレクトロニクスソサエティテラヘルツ応用システム時限研究専門委員会・委員 IEICE Electronics Society, Technical Group on Terahertz Application Systems・Member	2007.04.－（継続中） 2007.04.－Present	テラヘルツ応用システムに関する研究推進のための研究会企画・運営・開催を中心とする研究者コミュニティの醸成・活性化。 Fostering and activation of the research community mainly by organization/management of research meetings, for promotion of research related to terahertz application systems.
尾辻　泰一 Taiichi Otsuji	電子情報通信学会エレクトロニクスソサエティ電子デバイス研究専門委員会・委員 IEICE Electronics Society, Technical Group on Electron Devices・Member	2005.04.－（継続中） 2005.04.－Present	電子情報通信学会エレクトロニクスソサエティ電子デバイス研究専門委員会の企画・運営。 Organization/management of committee meetings of Technical Group on Electron Devices, IEICE Electronics Society.
尾辻　泰一 Taiichi Otsuji	日本応用物理学会東北支部・幹事 JSAP Tohoku Section・Manager	2005.04.－（継続中） 2005.04.－Present	日本応用物理学会東北支部活動の企画・運営。 Organization/management of activities of JSPS Tohoku Section.
尾辻　泰一 Taiichi Otsuji	電子情報通信学会東北支部・委員 IEICE Tohoku Section・Member	2007.04.－（継続中） 2007.04.－Present	電子情報通信学会東北支部活動の企画・運営。 Organization/management of activities of IEICE Tohoku Section.
尾辻　泰一 Taiichi Otsuji	日本学術振興会学術システム研究センター・主任研究員 Research Center for Science Systems, Japan Society for the Promotion of Science・Senior Program Officer	2015.04.－（継続中） 2015.04.－Present	日本学術振興会が公的資金提供組織として所掌する科研費や特別研究員ならびに各種表彰事業に対する制度設計・審査方法等への提言 Proposal for the system design and examination/review method etc. for the KAKENHI and Fellowship programs and the various award projects under the responsibility of the Japan Society for the Promotion of Science as a primary public funding agency in Japan.

尾辻　泰一 Taiichi Otsuji	日本学術会議・連携会員 Science Council of Japan・Member	2017.04.－（継続中） 2017.04.－Present	国際電波科学連合 URSI-C 分科会 C 小委員会の企画・運営 Organization/management of activities of the Japanese National Committee of the International Union of Radio Science (URSI), Sub-committee-C.
尾辻　泰一 Taiichi Otsuji	国際電波科学連合 URSI-C 分科会 C 小委員会・委員 The Japanese Committee of the International Union of Radio Science, Sub-committee-D・Member	2007.04.－（継続中） 2007.04.－Present	国際電波科学連合 URSI-D 分科会 D 小委員会の企画・運営 Organization/management of activities of the Japanese National Committee of the International Union of Radio Science (URSI), Sub-committee-D.
末光　哲也 Tetsuya Suemitsu	応用物理学会・講演会プログラム委員 JSAP Meetings, Program Committee Member	2008～2015 年度 FY2008－2015	春秋の講演会のプログラムの編成，講演奨励賞の審査。 Organization of programs of spring and autumn meetings and examination for Young Scientist Presentation Awards.
末光　哲也 Testuya Suemitsu	応用物理学会・講演会企画運営委員 JSAP Meetings, Program Committee Subcommittee Chair	2014～2015 年度 FY2014－2015	春秋の講演会の企画・運営。 Organization/management of spring and autumn meetings.

(2) 学術的国際会議の企画・運営
Planning and organizing academic international conferences.

氏名 Name	組織名・役職名 Organization/post	期　間 Year	活　動　内　容 Nature of activity
尾辻　泰一 Taiichi Otsuji	SPIE Defense, Security, and Sensing Terahertz Devices and Systems Technical Program Committee・Member	2007－2014 年度 FY2007－2014	投稿論文の査読・招待講演の選定等。 Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
尾辻　泰一 Taiichi Otsuji	International Symposium on Graphene Devices Organizing Committee (ISGD)・Chair	2014 年度 FY2014	国際会議の企画・運営・開催。 Conference organization/management Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
尾辻　泰一 Taiichi Otsuji	International Electron Device Meeting (IEDM) Nano-Device Technology Technical Program Committee・Chair	20014 年度 FY2014	投稿論文の査読・招待講演の選定等。 Session program coordination, Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations

尾辻　泰一 Taiichi Otsuji	International Electron Device Meeting (IEDM) Nano-Device Technology Technical Program Committee・Member	2013 年度 FY2013	投稿論文の査読・招待講演の選定等。 Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
尾辻　泰一 Taiichi Otsuji	RPGR: International Conference on Recent Progress in Graphene Research・International Advisory Board member	2013～継続中 2013－Present	国際会議の企画・運営・開催。 Conference organization/management Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
尾辻　泰一 Taiichi Otsuji	CIMTEC 2020: International Conferences on Modern Materials & Technologies・International Advisory Board member	2013～継続中 2013－Present	国際会議の企画・運営・開催。 Conference organization/management Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
尾辻　泰一 Taiichi Otsuji	RJUSE: Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies・International Steering Committee Chair	2016～継続中 2016－Present	国際会議の企画・運営・開催。 Conference organization/management Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
尾辻　泰一 Taiichi Otsuji	IRMMW-THz: International Conference on InfraRed, MilliMeter Wave and TeraHerz・International Steering Committee member	2018～継続中 2018－Present	国際会議の企画・運営・開催。 Conference organization/management Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
尾辻　泰一 Taiichi Otsuji	CSW/ISCS: Compound Semiconductor Week / International Symposium on Compound Semiconductors・Technical Program Sub-Committee member	2013～継続中 2013－Present	投稿論文の査読・招待講演の選定等。 Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
尾辻　泰一 Taiichi Otsuji	ICMNE: International Advisory Committee member, Int. Conf. on Micro- and Nano-Electronics・	2013～継続中 2013－Present	投稿論文の査読・招待講演の選定等。 Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations

	Technical Program Committee member		
尾辻　泰一 Taiichi Otsuji	AWAD: Asia-Pacific Workshop on Fundamentals and Applications of Advanced Semiconductor Devices・Technical Program Committee member	2007～継続中 2007－Present	投稿論文の査読・招待講演の選定等。 Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
尾辻　泰一 Taiichi Otsuji	TWHM: Topical Workshop on Heterostructure Microelectronics・Technical Program Committee member	2007～継続中 2017－Present	投稿論文の査読・招待講演の選定等。 Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
末光　哲也 Tetsuya Suemitsu	European Solid-State Device Research Conference (ESSDERC), Technical Program Committee・Member	2009～継続中 2009－Present	投稿論文の査読・招待講演の選定等 Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
末光　哲也 Testuya Suemitsu	Compound Semiconductor Week (CSW), Technical Program Committee Member	2015	投稿論文の査読・招待講演の選定等 Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
末光　哲也 Testuya Suemitsu	International Conference on Indium Phosphide and Related Materials (IPRM), Technical Program Committee Member	2016	投稿論文の査読・招待講演の選定等 Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
佐藤　昭 Akira Satou	5th Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies (RJUSE TeraTech-2016), Symposium Chair	2016 年度 FY2016	国際会議の企画・運営・開催。 Conference organization/management Review of abstracts submitted, Session organization, Nomination/selection of invited/keynote presentations
佐藤　昭 Akira Satou	Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies (RJUSE), International Steering Committee	2016 年度－継続中 FY2016－Present	国際会議の国際運営委員。 Organization of an international conference.

	Member		
佐藤　昭 Akira Satou	International Symposium on Photonics and Optical Communications (ISPOC 2017), Local Organizing Committee Member	2017 年度 FY2017	国際会議の運営。 Organization of an international conference.
佐藤　昭 Akira Satou	The 43rd International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW-2018), Program Committee Member	2017－2018 年度 FY2017－2018	国際会議の運営。 Organization of an international conference.

(3) 学術論文誌の編集・査読 / Editor and reviewer for academic journals.

氏名 Name	組織名・役職名 Organization/post	期　間 Year	活　動　内　容 Nature of activity
尾辻　泰一 Taiichi Otsuji	Appl. Phys. Lett., Nature Photon. をはじめ各種英文学術論文誌 18 誌・Reviewer	2013 年度－継続中 FY2013－Present	投稿論文の査読（全 56 件） Review of 50 manuscripts submitted
末光　哲也 Tetsuya Suemitsu	IEEE Electron Device Lett., IEEE Trans. Electron Devices を含む英文学術論文誌 10 誌・Reviewer	2013～2017 年度 FY2013－2017	投稿論文の査読（全４８件） Review of 48 manuscripts submitted
佐藤　昭 Akira Satou	J. Appl. Phys., Appl. Phys. Lett., IEEE J. THz Sci. Technol., Opt. Exp., Jpn. J. Appl. Phys., Solid State Electron. を含む英文学術論文誌 18 誌の査読者 Reviewer for above-mentioned scientific journals	2013 年度－継続中 FY2013－Present	投稿論文の査読（全 30 件） Review of 30 manuscripts submitted

3. 社会貢献 / Contributions to society

(1) 教育活動 / Educational activities outside university

期　間 Year	主催者名・場所 Organization/Venue	活動内容 Nature of activity
2013 年度－継続中 FY2013－ Present	米国電気電子技術者協会電子デバイスソサエティディスティンギッシュドレクチェラー講演会・日本、米国、ロシア各都市 IEEE Electron Device Society Distinguished Lecturer Lecture・Japan, USA, Russia	IEEE-EDS において認定された Distinguished Lecturer として「グラフェン・プラズモンの物理とそのテラヘルツデバイス応用」に関するチュートリアルレクチャーを大学院生向けに年 2 回世界各地で実施。（尾辻泰一） Tutorial Lectures on “Graphene Plasmonics and their Applications to Terahertz Device Technology” given to graduate students twice a year at cities in Japan, USA, Russia.

(2) 産業界における指導・啓蒙 / Instruction and education for industry

期　間 Year	企業・組織名 Company/Organization	活動内容 Nature of activity
2006 年度－継続中 FY2006－ Present	テラヘルツテクノロジーフォーラム Terahertz Technology Forum	テラヘルツ技術に関する調査研究標準化・産業応用・啓蒙活動を行うための産学官連携組織「テラヘルツテクノロジーフォーラム」に参画。運営委員、評議員（尾辻泰一） Production of doing investigation research standardization, an industrial application, and the educational campaign concerning the terahertz technology.

(3) 国・地方自治体・公共団体における活動
Activities for national and local governments, and public organizations

期　間 Year	主催者・組織名 Organizer/Organization	活動内容 Nature of activity
2006～2014 年度 FY2006－2014	総務省・「戦略的情報通信研究開発推進制度(SCOPE)専門評価委員会」 Specialty Evaluation Committee In Ministry of Public Management, Home Affairs, Posts and Telecommunications strategic telecommunication research and development promotion system (SCOPE)	専門評価委員（尾辻泰一） Expert Council Member (T. Otsuji)
2006～2014 年度 FY2006－2014	総務省・「電波利用料財源による技術試験事務及び研究開発専門評価委員会」 Technological examination clerical work and research and development specialty evaluation committee in Ministry of Public Management, Home Affairs, Posts and Telecommunications spectrum user fee fiscal resources	専門評価委員（尾辻泰一） Expert Council Member (T. Otsuji)
2015 年度～（継続中） FY2015－ Present	総務省国立研究開発法人審議会・専門委員 National Research and Development Corporation Council Committee of the Ministry of Internal Affairs and Communivations・Expert Member	専門評価委員（尾辻泰一） Expert Member (T. Otsuji)

(4) アウトリーチ活動 / Outreach activities

該当なし

4. 競争的資金の獲得状況 / Research funds/grants received

(1) 科学研究費補助金 / Grant-in-Aid for Scientific Research (KAKENHI) Unit: 1,000 JPY

研究種目 Research category	氏名 Name	採択期間 Project year	代表又は分担 Principal/Co-investigator	補助金総額 Total budget	研究課題 Title of research project
特別推進研究 Grant-in-Aid for Specially Promoted Research	尾辻　泰一 Taiichi Otsuji	2011－2015 年度 FY2011－2015	代表 PI	367,400	グラフェン・テラヘルツレーザーの創出 Creation of Graphene Terahertz Lasers
若手研究（B） Grant-in-Aid for Young Scientific Research (B)	佐藤　昭 Akira Satou	2011－2013 年度 FY2011－2013	代表 PI	3,300	グラフェン内テラヘルツプラズモンの理論解析とそのテラヘルツ波素子への応用 Theoretical Study of Terahertz Plasmons in Graphene and Their Application to Terahertz Devices
特別研究員奨励費 Grant-in-Aid for JSPS Research Fellow	渡辺　隆之 Takayuki Watanabe	2011－2013 年度 FY2011－2013	代表 PI	1,900	グラフェンの非平衡キャリアダイナミクスを利用した新原理テラヘルツレーザの研究 Study of New Principle Terahertz Laser using Nonequilibrium Carrier Dynamics in Graphene
基盤研究（C） Grant-in-Aid for Scientific Research (C)	末光　哲也 Tetsuya Suemitsu	2012－2014 年度 FY2012－2014	代表 PI	4,100	GaN 系 HEMT における電子速度の詳細評価の研究 Detail Evaluation of Electron Velocity in GaN HEMTs
若手研究（B） Grant-in-Aid for Young Scientific Research (B)	鷹林　将 Susumu Takabayashi	2012－2013 年度 FY2012－2013	代表 PI	3,500	炭素機能性材料を用いた革新的次世代電子デバイスの開発 Fabrication of an innovative electronic device with carbonaceous materials
若手研究（A） Grant-in-Aid for Young Scientific Research (A)	鷹林　将 Susumu Takabayashi	2014 年度 FY2014	代表 PI	10,316	炭素材料の機能化と融合による革新的電子/光デバイスの開発 Development of innovative electronic/photonic devices by functionalization and fusion of carbonaceous materials
若手研究（B） Grant-in-Aid for Young Scientific Research (B)	ＴＯＭＢＥＴ ＳＴＥＰＨＡＮＥ	2014－2015 年度 FY2014－2015	代表 PI	3,100	Graphene terahertz detectors based on plasmons and resonant tunneling
若手研究（B） Grant-in-Aid for Young Scientific Research (B)	佐藤　昭 Akira Satou	2014－2016 年度 FY2014－2016	代表 PI	3,100	新規グラフェン THz プラズモニックデバイスの理論的検証 Theoretical Verification of Novel Graphene Terahertz Plasmonic Devices
挑戦的萌芽研究 Grant-in-Aid for Challenging Exploratory Research	末光　哲也 Tetsuya Suemitsu	2015－2016 年度 FY2015－2016	代表 PI	3,000	ScAlMg04 基板を用いた窒化物半導体縦型トランジスタ作成プロセスの研究 Study on Gan-based vertical transistors using ScAlMg04 substrates
基盤研究（Ａ） Grant-in-Aid for Scientific Research (A)	尾辻　泰一 Taiichi Otsuji	2016 年度 FY2016	代表 PI	241	二次元原子薄膜ヘテロ接合の複合量子物性とそのテラヘルツ光電子デバイス応用 Creation of 2D-Atomically-Thin-Layered Heterojunctions and their Applications to Novel Terahertz Photonic Devices
基盤研究（B） Grant-in-Aid for Scientific Research (B)	末光　哲也 Tetsuya Suemitsu	2016－2017 年度 FY2016－2017	代表 PI	7,064	窒素極性 InGaN チャネルヘテロ構造を用いた高電子移動度トランジスタの研究 Study on nitrogen-polar InGaAs-

					channel high electron mobility transistors
挑戦的萌芽研究 Grant-in-Aid for Challenging Exploratory Research	尾辻　泰一 Taiichi Otsuji	2016－2017 年度 FY2016－2017	代表 PI	2,800	半導体二次元プラズモニックブームの発生とそのテラヘルツ応用 Generation of the semiconductor two-dimensional plasmonic boom and its application to terahertz devices
基盤研究（S） Grant-in-Aid for Scientific Research (S)	尾辻　泰一 Taiichi Otsuji	2016－2020 年度 FY2016－2020	代表 PI	144,600	二次元原子薄膜ヘテロ接合の創製とその新原理テラヘルツ光電子デバイス応用 Creation of 2D-Atomically-Thin-Layered Heterojunctions and their Applications to Novel Terahertz Photonic Devices
若手研究（B） Grant-in-Aid for Young Scientific Research (B)	渡辺　隆之 Takayuki Watanabe	2017－2019 年度 FY2017－2019	代表 PI	3,300	電流注入型グラフェンテラヘルツプラズモニックレーザーの創出 Creation of Current Injection type Graphene Terahertz Plasmonic Lasers
挑戦的研究（開拓） Challenging Research (Pioneering)	尾辻　泰一 Taiichi Otsuji	2018－2021 年度 FY2018－2021	代表 PI	19,800	グラフェンディラックフェルミオンのプラズモン異常不安定性とそのテラヘルツ機能応用 Extraordinary plasmon instabilities in graphene Dirac Fermions and their terahertz functional device applications
特別研究員奨励費 Grant-in-Aid for JSPS Research Fellow	細谷　友崇 Tomotaka Hosotani	2018－2020 年度 FY2018－2020	代表 PI	3,100	巨大利得を有する光無線融合アクティブプラズモニックフォトミキシングデバイスの創出 Study of Active Plasmonic-Photo-Mixing Device for Opto-RF Fusion system with huge gain
基盤研究（C） Grant-in-Aid for Scientific Research (C)	佐藤　昭 Akira Satou	2018－2020 年度 FY2018－2020	代表 PI	3,400	二次元周期回折構造を有するプラズモニック THz ディテクタの研究 Plasmonic THz Detector with 2D Periodic Diffraction Structure

(2) 受託研究費 / Other grants and subsidies　　Unit: 1,000 JPY

事業・機関名 Grant name	氏　名 Name	採択期間 Project year	代表又は分担 Principal/Co-investigator	補助金総額 Total budget	研　究　課　題 Title of research project
受託研究，JST-CREST，科学技術振興機構・戦略的創造研究推進事業 Commissioned Research, JST-CREST, JST Strategic Basic Research Progmras	尾辻　泰一 Taiichi Otsuji	2007－2013 年度 FY2007－2013	代表 PI	490,800	グラフェン・オン・シリコン材料デバイス技術の開発 Development of Graphene-on-Silicon Material/Device Technologies
受託研究，JST-ANR，科学技術振興機構・戦略的日仏国際共同研究推進事業 Commissioned Research, JST-	尾辻　泰一 Taiichi Otsuji	2010－2013 年度 FY2010－2013	代表 PI	51,000	テラヘルツ帯プラズモニック・ナノＩＣＴデバイスを利用した無線通信 Wireless communication using terahertz plasmonic-nano ICT devices

ANR, Strategic International Collaborative Research Program					
受託研究，総務省 SCOPE Commissioned Research, Ministry of Internal Affairs and Communications, SCOPE	末光　哲也 Tetsuya Suemitsu	2013 年度 FY2013	代表 PI	2,309	InGaAs 系 HEMT を用いた高性能・省電力ミリ波・テラヘルツ帯無線通信用フロントエンド回路の研究開発 Development of frontend circuits for terahertz/millimeter-wave wireless communications using InGaAs-based HEMT
共同研究，NTT Collaborative Research, NTT	尾辻　泰一 Taiichi Otsuji	2012－2014 年度 FY2012－2014	代表 PI	36,000	超高速光・無線デバイス技術の研究 Study on ultrafast optical and wireless device technologies
受託研究，総務省 SCOPE Commissioned Research, Ministry of Internal Affairs and Communications, SCOPE	佐藤　昭 Akira Satou	2014 年度 FY2014	代表 PI	20,990	二次元プラズモンを利用した超高速近距離テラヘルツ無線用光源・検出デバイスの開発 Development of Sources and Detectors Utilizing Two-Dimensional Plasmons for Ultrafast Short-Distance Terahertz Wireless Communications
受託事業，JSPS-RFBR 二国間交流事業共同研究 Commissioned Project, JSPS-RFBR Bilateral Joint Research Project	尾辻　泰一 Taiichi Otsuji	2014－2015 年度 FY2014－2015	代表 PI	4,750	周期的グラフェンナノ構造におけるテラヘルツ・プラズモニック超放射 Terahertz Plasmonic Superradiance in Periodic Graphene Nanostructures
受託事業，JSPS 学術研究動向調査等 Commissioned Project, JSPS Servey for Scientific Research Trends	尾辻　泰一 Taiichi Otsuji	2015－2019 年度 FY2015－2019	代表 PI	23,000	工学系科学分野に関する学術研究動向及び学術振興方策－テラヘルツ電磁波科学と光電子融合材料・デバイス工学の新たな展開－ Academic Research Trends and Science Promotion Actions in the Field of Engineering Science - New trends in terahertz science and optoelectronic materials and device engineering-
共同研究，福田結晶・日亜化学 Collaborative Research, IPROS and NICHIA	末光　哲也 Tetsuya Suemitsu	2015－2016 年度 FY2015-2016	分担	5,100	窒化物半導体における窒素極性面の成長研究 Study on growth of nitrogen-polar surface of nitride semiconductors
共同研究，サイオクス Collaborative Research, Sciocs	末光　哲也 Tetsuya Suemitsu	2016 年度 FY2016	代表 PI	936	GaN 系ヘテロ構造のミリ波デバイスへの応用に関する研究 Study on Millimeter-Wave Device Application of GaN-Based Heterostructures
受託研究，総務省 SCOPE Commissioned Research, Ministry of Internal Affairs and Communications, SCOPE	末光　哲也 Tetsuya Suemitsu	2016 年度 FY2016	代表 PI	2,160	InGaAs 系 HEMT を用いたテラヘルツ電波方式高効率無線電力伝送システムの研究開発 Development of a high-efficiency wireless power transfer system via terahertz wave using InGaAs-based HEMT

受託研究, NICT Commissioned Research, NICT	佐藤　昭 Akira Satou	2016－2020 年度 FY2016－2020	代表 PI	45,450	高い環境耐性を有するキャリアコンバータ技術の研究開発 R&D project on carrier-conversion technology with high environmental tolerance Research and System demonstration on high capacity O/E and E/O carrier-conversion technology for next generation wireless and wired networks
受託事業, JSPS-RFBR 二国間交流事業共同研究 Commissioned Project, JSPS-RFBR Bilateral Joint Research Project	尾辻　泰一 Taiichi Otsuji	2018-2019 年度 FY2018－2019	代表 PI	4,787	テラヘルツ放射利得媒質としてのディラック分散則を有するナノ構造に関する研究 Study on nanostructures with the Dirac dispersion law as gain media for the terahertz radiation

5. 国際共同研究・連携研究・連携教育活動の実績
International joint research, collaborative research, and collaborative education

国際共同研究・連携研究 International joint research and collaborative research

タイプ Type	採択期間 Project year	研　究　課　題 Title of research project
JST-ANR 国際科学技術共同研究推進事業，日仏 JST-ANR Strategic International Collaborative Research Program, Japan-France	2010－2013 年度 FY2010－2013	テラヘルツ帯プラズモニック・ナノＩＣＴデバイスを利用した無線通信（モンペリエ第二大学、ヴォイチェック・クナップ教授） Wireless communication using terahertz plasmonic-nano ICT devices (Université Montpellier II, Prof. Wojciech Knap)
東北大学重点戦略支援プログラム，日米 Tohoku University's Focused Research Project, Japan-USA	2010－2014 年度 FY2010－2014	将来の大学間協定を見据えた東北大学電気通信研究所－MIT 電子工学研究所国際共同研究プロジェクト（RIEC-RLE Project） Research collaboration in photonics with MIT towards future University Partnership Agreement (RIEC-RLE Project)
日独 Japan-Germany	2013－2015 年度 FY2013－2015	グラフェンテラヘルツデバイスの応用（レーゲンスブルク大学　テラヘルツセンター、セルゲイ・ガニチェフ教授） Applications of Graphene Terahertz Devices (Univ. Regensburg, THz Center, Prof. Sergey Ganichev)
JSPS-RFBR 二国間交流事業共同研究，日露 JSPS-RFBR Bilateral Joint Research Project, Japan-Russia	2014－2015 年度 FY2014－2015	周期的グラフェンナノ構造におけるテラヘルツ・プラズモニック超放射（ロシア科学アカデミー・コテルニコフ無線電子工学研究所（サラトフ支部）、ビャチェスラフ・ポポフ教授） Terahertz Plasmonic Superradiance in Periodic Graphene Nanostructures (Institute of Radio Engineering and Electronics (Saratov Branch), Russian Academy of Sciences, Prof. Vyacheslav Popov))
RIEC 共同プロジェクト，日西 RIEC Cooperative Research Project, Japan-Spain	2014－2016 年度 FY2014－2016	テラヘルツセンシングデバイスに関する研究（サラマンカ大学，ヤーヤ・ムバラク・メジアニ教授） Study on Terahertz Sensing Devices (Universidad de Salamanca, Prof. Yahya Moubarak Meziani)
RIEC 共同プロジェクト，日米 RIEC Cooperative Research Project, Japan-USA	2016－2018 年度 FY2016－2018	グラフェンを中心とする二次元原子薄膜ヘテロ構造のテラヘルツ応用に関する日米共同研究（ニューヨーク州立大学バッファロー校，ウラミジミール・ミティン 教授） Graphene-Based Atomically-Thin 2D Heterostructures and their Terahertz Applications (State University of New York at Buffalo, Prof. Vladimir Mitin)
RIEC 共同プロジェクト，日露 RIEC Cooperative Research Project, Japan-Russia	2017－2018 年度 FY2017－2018	Theoretical Study of Nonequilibrium Dynamics of Electrons and Plasmons in Two-Dimensional Electron Systems （モスクワ物理工科大学、ドミトリー・スヴィンツォフ博士） (Moscow Institute of Physics and Technology, Dr. Dmitry Svintstov)
RIEC 共同プロジェクト，日西 RIEC Cooperative Research Project, Japan-Spain	2017－2019 年度 FY2017－2019	Development of graphene based devices for terahertz applications （サラマンカ大学、ヤーヤ・ムバラク・メジアニ教授） (Universidad de Salamanca, Prof. Yahya Moubarak Meziani)
RIEC 共同プロジェクト，日露 RIEC Cooperative Research Project, Japan-Russia	2018 年度 FY2018	Japan-Russia International collaborative research on gated GaAs structures with an array of self-assembled Sn-nanothreads and their terahertz applications （ロシア科学アカデミー超高周波半導体エレクトロニクス研究所、ドミトリー・ポノマレフ博士） (Institute of Ultra High Frequency Semiconductor Electronics of Russian Academy of Sciences, Dr. Dmitry Ponomarev)
JSPS-RFBR 二国間交流事業共同研究，日露 JSPS-RFBR Bilateral Joint Research Project, Japan-Russia	2018－2019 年度 FY2018－2019	テラヘルツ放射利得媒質としてのディラック分散則を有するナノ構造に関する研究（ロシア科学アカデミーマイクロ構造物理研究所、セルゲイ・モロゾフ博士） Study on nanostructures with the Dirac dispersion law as gain media for the terahertz radiation (Institute of Physics for Microstructures, Russian Academy of Sciences, Dr. Sergey Morozov)

国際連携教育活動 International collaborative education

活動名 Activity name	期間 Year	活動内容 Nature of activity
Nano Japan Program 日米 Nano Japan Program Japan-USA	2013－2015 年度 FY2013－2015	学部学生を対象に日本での最先端の研究経験と言語および文化研究を組み合わせたプログラムを通じて、世界的に優秀な科学者やエンジニアを育成する日本短期間滞在プログラムの学生受入 Acceptance of short-term stays of bachelor students for fostering world-wide excellent scientists and engineers, through programs that combine state-of-the-art research experiences in Japan as well as linguistic and cultural studies.
NAKATANI RIES U.S. Fellowship	2016 年度 FY2016	学部学生を対象に日本での最先端の研究経験と言語および文化研究を組み合わせたプログラムを通じて、世界的に優秀な科学者やエンジニアを育成する日本短期間滞在プログラムの学生受入 Acceptance of short-term stays of bachelor students for fostering world-wide excellent scientists and engineers, through programs that combine state-of-the-art research experiences in Japan as well as linguistic and cultural studies.
Establishment of inter-departmental agreement with the Faculty of Physics of the Lomonosov Moscow State University	2018－2019 年度 FY2018－2019	モスクワ大学物理学部と東北大学の３研究所（電気通信研究所、流体科学研究所、多元物質科学研究所）との他部局間協定締結に係る (1)連絡調整責任者の担当 (2)モスクワ大学物理学部 SYSOEV, Nikolay N.教授の表敬訪問の受入 The following activities related to establishment of inter-departmental agreement between the Faculty of Physics of the Lomonosov Moscow State University and 3 institutes (RIEC, IFS, and IMRAM) of Tohoku University: (1) contact coordinator (2) acceptance of a courtesy call of Prof. Nikolay N. Sysoev, The Faculty of Physics of the Lomonosov Moscow State University

6. 共同利用・共同研究拠点活動の実績
Achievements of work done under the framework of Joint Usage/Research Center

共同プロジェクト

タイプ Type	代表者 Principal investigator	採択期間 Project year	研　究　課　題 Title of research project
H23A02	内野　俊 Takashi Uchino	2011－2013 年度 FY2011－2013	カーボンナノ材料を用いた光電子デバイスの研究 Optoelectronic devices using carbon-based nanomaterials
H24A10	前澤　宏一 Koichi Maezawa	2012－2014 年度 FY2012－2014	共鳴トンネル素子を用いた THz 送受信システムの研究 THz wave generation and detection systems using resonant tunneling devices
H25A02	楳田　洋太郎 Yotaro Umeda	2013－2015 年度 FY2013－2015	InGaAs HEMT を用いた大電力テラヘルツ信号源の研究 High-power terahertz signal source using InGaAs HEMT
H26A01	内野　俊 Takashi Uchino	2014－2016 年度 FY2014－2016	グラフェンを用いた光電子デバイスの研究 Development of graphene-based electronic and photonic devices
H26A23	ヤーヤ　ムバラク　メジアニ Yahya Moubarak Meziani	2014－2016 年度 FY2014－2016	テラヘルツセンシングデバイスに関する日西国際共同研究 Japan-Spain International Collaborative Research on Terahertz Sensing Devices
H27A07	楢原　浩一 Koichi Narahara	2015－2016 年度 FY2015－2016	THz デバイス応用に向けた半導体二次元電子系内プラズモンのシミュレーションによる研究 Computational Study of Plasmons in Semiconductor Two-Dimensional Electron Systems for THz Device Applications
H27A08	前澤　宏一 Koichi Maezawa	2015－2017 年度 FY2015－2017	位相雑音特性に着目した共鳴トンネル THz 信号源の研究 Studies on resonant tunneling THz signal generators having low phase noise properties
H27A09	吉本　直人 Naoto Yoshimoto	2015－2017 年度 FY2015－2017	フルコヒーレントアクセス方式を実現するための光−無線周波数変換方式に関する研究 A study of carrier conversion system between optical and

			wireless signal frequency domain for future full-coherent access networks
H28A02	楳田　洋太郎 Yotaro Umeda	2016－2018 年度 FY2016－2018	フィールドプレート付 InGaAs HEMT を用いた電力増幅器高効率化の研究 Study on High Power Amplifier with InGaAs HEMTs with Field Plate
H28A15	ウラジミール　ミティン Vladimir Mitin	2016－2018 年度 FY2016－2018	グラフェンを中心とする二次元原子薄膜ヘテロ構造のテラヘルツ応用に関する日米共同研究 Graphene-Based Atomically-Thin 2D Heterostructures and their Terahertz Applicationsueno
H29A02	内野　俊 Takashi Uchino	2017－2019 年度 FY2017－2019	低損失フレキシブル・メタマテリアルの開発 Development of low-loss flexible metamaterials
H29A07	永瀬　雅夫 Masao Nagase	2017－2019 年度 FY2017－2019	単結晶グラフェンのデバイス化の研究 Single-crystal graphene on SIC for electronic devices
H29A10	ヤーヤ　ムバラク　メジアニ Yahya Moubarak Meziani	2017－2019 年度 FY2017－2019	Development of graphene based devices for terahertz applications
H29A11	ドミトリー　スヴィンツォフ Dmitry Svintsov	2017－2019 年度 FY2017－2019	Theoretical Study of Nonequilibrium Dynamics of Electrons and Plasmons in Two-Dimensional Electron Systems
H30A04	ドミトリー　ポノマレフ Dmitry Ponomarev	2018 年度 FY2018	Japan-Russia International collaborative research on gated GaAs structures with an array of self-assembled Sn-nanothreads and their terahertz applications
H30A12	吉本　直人 Naoto Yoshimoto	2018－2020 年度 FY2018-2020	広帯域周波数選択光電子デバイスを用いた低遅延アクセスネットワークの構成法に関する研究 A Study of delay-sensitive access network configuration using widely frequency selectable optoelectronics devices
H30A13	前澤　宏一 Koichi Maezawa	2018－2020 年度 FY2018-2020	共鳴トンネル素子を用いた硬い発振器とその結合系の THz 信号処理への応用 Single and coupled hard-type oscillators using resonant tunneling diodes and their application to THz signal processing

7. 研究教育指導 / Research supervision

(1) 担当講義リスト / List of lectures

学部講義 Lectures in undergraduate schools

科　目　名 Course title	開講年次 Year	教員名 Instructor
ディジタル信号処理 Digital Signal	2013～2018	尾辻泰一 Taiichi Otsuji
電子デバイス基礎 Fundamentals of Electron Devices	2013～2018	尾辻泰一 Taiichi Otsuji (全 14 コマの 7 コマを分担) (7 of 14 lectures)
電磁気学 A（短期留学生用英語講義プログラム） Electromagnetism A (English class for short-term foreign students)	2013～2018	尾辻泰一 Taiichi Otsuji (全 15 コマの 6 コマを分担) (6 of 15 lectures)
電磁気学 I Electromagnetics I	2014～2017	末光哲也 Tetsuya Suemitsu

大学院講義 Lectures in graduate schools

科　目　名 Course title	開講年次 Year	教員名 Instructor
超高周波デバイス工学 Ultrahigh-Frequency Device Engineering	2014～2018 （隔年） (alternate year)	尾辻泰一 Taiichi Otsuji 末光哲也 (2014～2016) Tetsuya Suemitsu (2014～2016) 佐藤昭 (2018) Akira Satou (2018)
先端高周波情報工学 Advanced High-Frequency Information Engineering	2015, 2018	尾辻泰一 Taiichi Otsuji (全 12 コマの 1 コマを分担) (one of 12 lectures)
半導体工学 Semiconductor Engineering	2013～2016	末光哲也 (全 12 コマの 4 コマを分担) (4 of 12 lectures)

その他 Others

科　目　名 Course title	開　講　年　次 Year	教員名 Instructor
学生実験 B Experimental Practice B	2013～2018	佐藤昭 (2013～2016) Akira Satou 渡辺隆之 (2017～2018) Takayuki Watanabe
プログラミング演習 A Programming Exercise A	2018	佐藤昭 Akira Satou
創造工学研修	2013～2018	末光哲也 (2013～2015) Tetsuya Suemitsu 佐藤昭 (2016～2018) Akira Satou

(2) 学位取得者リスト
List of bachelor’s, master’s and doctoral degree students supervised

＜博士後期課程(博士)修了者リスト Doctoral degree students supervised＞

工学研究科電気・通信工学専攻 Department of Electrical Engineering, Graduate School of Engineering

題　　目 Title of thesis	氏　名 Author	修了年 Year	備考 Note
半導体二次元電子系のプラズモンを利用したコヒーレントテラヘルツ波の発生・増幅に関する研究 A Study on Radiation and Amplification of Coherent Terahertz Emission Utilizing Plasmons in Semiconductor Two-Dimensional Electron Systems	渡辺　隆之 Takayuki Watanabe	2013	学振特別研究員(DC1) JSPS Research Fellow (DC1)
InGaAs 系高電子移動度トランジスタの高周波化およびミリ波帯増幅回路への応用に関する研究 Study on High-Frequency InGaAs-Based High Electron Mobility Transistors for Millimeter-Wave Amplifiers	吉田　智洋 Tomohiro Yoshida	2014	
Study on Graphene-based 2-Dimensional Heterostructures for Emission and Detection of Terahertz Radiation	YADAV, Deepika	2017	国費留学生 Government Scholar

＜博士前期課程(修士)修了者リスト Master's degree students supervised＞

工学研究科電気・通信工学専攻 Department of Electrical Engineering, Graduate School of Engineering

題　　目 Title of thesis	氏　名 Author	修了年 Year	備考 Note
ミリ波応用を目指した GaN 系高電子移動度トランジスタの高速化及び高出力化の研究 Study on GaN-based High Electron Mobility Transistor for High Speed and High Power Performance	小林　健悟 Kengo Kobayashi	2013	
高電子移動度トランジスタにおけるプラズモン共鳴を利用したテラヘルツ電磁波検出に関する研究 Study on Terahertz-Wave Detection Utilizing Plasmon Resonance in High-Electron-Mobility Transistors	栗田　裕記 Yuki Kurita	2013	
光電子融合グラフェンチャネルトランジスタのデバイスプロセス技術に関する研究 A Study on Device Process Techniques of Graphene Channel Transistor for Photonics and Electronics Convergence	江藤　隆紀 Takanori Eto	2013	
グラフェンのテラヘルツ帯非線形光学応答に関する研究 Study on Terahertz Nonlinearity on Optical Response on Graphene	小嶋　一輝 Kazuki Kojima	2013	
グラフェンアクティブプラズモニクスとそのテラヘルツ帯デバイス応用に関する研究 Study on Graphene Active Plasmonics and their Applications to Terahertz Devices	矢部　裕平 Yuhei Yabe	2013	
光学励起グラフェンにおけるテラヘルツ帯誘導放出に関する実験的研究 Experimental Study on terahertz Stimulated Emission on Optically Pumped Graphene	杉山　弘樹 Hiroki Sugiyama	2014	
InAlN バリア層による GaN 系高電子移動度トランジスタの高性能化 Study for High Performance GaN HEMTs with InAlN Barrier Layer	畠山　信也 Shinya Hatakeyama	2014	
グラフェン及び化合物半導体を用いた光電子融合フォトミキシングデバイスに関する研究 Study on Optoelectronic Photomixing Devices Using Graphene or Compound Semiconductors	川﨑　鉄哉 Tetsuya Kawasaki	2014	
グラフェンプラズモンのモデリングとテラヘルツ波デバイス応用に関する理論研究	小関　勇気 Yuki Koseki	2014	

Modeling of Graphene Plasmons and Theoretical Study on Their Application to Terahertz Devices			
Study on Device Process Technology for High-Performance Graphene Field-Effect Transistors	BINTI HUSSIN, Mastura	2014	
グラフェンチャネル FET の高周波化とその光電子融合ミリ波帯ミキサへの応用に関する研究 Study on High Frequency Graphene-Channel Field-Effect Transistors and Their Applications to Optoelectronic Millimeter-Wave Frequency-Down-Conversion Mixer Devices	菅原　健太 Kenta Sugawara	2015	
A Study on the Terahertz Electromagnetic Wave Detection in Double Graphene Layer Heterostructures	STEVANUS, Arnold	2015	
グラフェンチャネル FET の高性能化とその電流注入テラヘルツレーザーへの応用に関する研究 Study on high performance graphene-channel field-effect transistors and their applications to current-injection terahertz lasers	玉虫　元 Gen Tamamushi	2015	
光学励起グラフェンにおけるテラヘルツ帯誘導増幅放出に関する実験的研究 Experimental Study on Amplified Stimulated Emission of Terahertz Radiation in Optically Pumped Graphene	若生　洋由希 Hiroyuki Wako	2015	
プラズモニックテラヘルツ検出器の高感度化とその高速テラヘルツ無線通信への応用に関する研究 Study on Plasmonic Terahertz Detectors with Improved High Responsivities and their Applications to High-Speed Terahertz Wireless Communications	糟谷　文月 Fuzuki Kasuya	2016	
グラフェン内電子間相互作用のモデリングとその非平衡キャリアダイナミクスへの影響に関する研究 Study on a Numerical Model of Electron-Electron Interaction in Graphene and Its Influence on Non-Equilibrium Carrier Dynamics	小松　竜大 Tatsuhiro Komatsu	2016	
グラフェンチャネルトランジスタの高性能化とそのコヒーレントテラヘルツ光源デバイスへの応用に関する研究 Study on a High Performance Graphene-Channel Field-Effect-Transistor and Its Application to Coherent Terahertz Light Source Devices	満塩　純希 Junki Mitsushio	2016	
プラズマ損傷の低減による GaN 系高電子移動度トランジスタの高性能化に関する研究 Study on Performance Improvement in GaN High Electron Mobility Transistors by Suppressing Plasma-Induced Damages	邉見　ふゆみ Huyumi Hemmi	2016	
高電子移動度トランジスタの極限高速化とそのプラズモニックテラヘルツ機能デバイス応用に関する研究 Study on ultimately-fast high-electron-mobility transistors and their applications to terahertz plasmonic functional devices	細谷　友崇 Tomotaka Hosotani	2017	
InP 系光電子融合ダブルミキサトランジスタとその光-ミリ波帯キャリア周波数下方変換への応用に関する研究 Study on InP-Based Optoelectronic Double-Mixer Transistors and their Application to Optical-to-Millimeter-Wave Carrier Frequency Down-Conversion	大森　雄也 Yuya Omori	2018	
グラフェンテラヘルツトランジスタレーザー高性能化のための材料プロセスデバイス技術の研究 Study on Material and Device Process Technologies for High Performance Graphene Terahertz Lasers	菅原　健太 Kenta Sugawara	2018	

二次元回折構造を介したプラズモンポラリトン励起とそのテラヘルツ電磁波検出素子への応用に関する研究 Study on Excitation of Plasmon-Polaritons by a 2D Grating Structure and their Applications to Terahertz Detectors	鈴木　雅也 Masaya Suzuki	2018	

＜学部(学士)卒業者リスト Bachelor’s degree students supervised＞

題　　目 Title of thesis	氏　名 Author	修了年 Year	備考 Note
グラフェンチャネル FET を用いたミリ波フォトニクスに関する研究 Study on Millimeter-Wave Photonics Using Graphene-Channel FETs	菅原　健太 Kenta Sugawara	2013	
光学励起グラフェンにおけるテラヘルツ帯自然放出の観測とレーザー応用に関する研究 Study on Observation of Terahertz Spontaneous Emission from Optically Pumped Graphene and their Laser Applications	若生　洋由希 Hiroyuki Wako	2013	
グラフェン中テラヘルツ表面プラズモンポラリトンの伝搬特性に関する理論研究 Theoretical Study on Propagation of THz Surface Plasmon-Polariton in Graphene	田島　裕章 Hiroaki Tajima	2013	
GaN 系高電子移動度トランジスタの高速化及び高耐圧化の研究 Study on Speed and Breakdown-Voltage Improvement of GaN-Based High-Electron-Mobility Transistors	安川　奈那 Nana Yasukawa	2014	
非対称二重格子ゲート高電子移動度トランジスタによるテラヘルツ電磁波検出に関する研究 Study on Terahertz-Wave Detection by Asymmetric Dual-Grating-Gate High-Electron-Mobility Transistors	糟谷　文月 Fuzuki Kasuya	2014	
プラズモニックテラヘルツ検出器における高感度化光結合系に関する研究 Study on High Responsivity Light Coupling System for Plasmonic THz Detectors	谷口　弘樹 Hiroki Taniguchi	2015	
ゲートリセス構造を有する高電子移動度トランジスタの極限高速化に関する研究 Study on Ultimate Speed Improvement of High-Electron-Mobility Transistors with Gate Recess Structure	細谷　友崇 Tomotaka Hosotani	2015	
InP-HEMT ミキサによる高効率光－ミリ波帯周波数下方変換に関する研究 Study on High-Efficiency Optical-to-Millimeter-Wave Frequency Down-Conversion by InP-HEMT Mixers	大森　雄也 Yuya Omori	2016	
グラフェンチャネルトランジスタとそのテラヘルツ光源デバイスへの応用に関する研究 Study on Graphene-channel Transistors and their Applications to Terahertz Light Sources	菅原　健太 Kenta Ssugawara	2016	
非対称二重格子ゲート高電子移動度トランジスタデバイス技術とそのテラヘルツ検出への応用に関する研究 Study on Device Technology of Asymmetric Dual-Grating-Gate High-Electron-Mobility Transistors and Its Applications to Terahertz-Wave Detection	鈴木　雅也 Masaya Suzuki	2016	
グラフェンプラズモン不安定性を動作原理とするテラヘルツ発振デバイスに関する研究 Study on Terahertz Oscillator Devices based on Plasmon Instability in Graphene	込山　貴大 Takahiro Komiyama	2017	

グラフェンチャネルトランジスタとそのテラヘルツ光源への応用に関する研究 Study on Graphene-channel Transistors and their applications to Terahertz Emitters	布施　吉貴 Yoshiki Fuse	2017	
半導体二次元プラズモンを用いた光-無線周波数変換の高効率化に関する研究 Study on Efficiency Improvement of Optical-to-Wireless Frequency Conversion Using Semiconductor Two-Dimensional Plasmons	眞鍋　颯也 Soya Manabe	2017	
非対称二重格子ゲートを有するグラフェントランジスタにおけるプラズモン不安定性 Plasmon Instability on Asymmetric Dual-Grating-Gate Graphene Transistors	荻浦　大地 Daichi Ogiura	2018	
ゲート制御グラフェン二重層ナノ構造のデバイスプロセスとそのテラヘルツ光源・検出応用に関する研究 Study on Device Fabrication of Gated Graphene Double Layer Nanostructures and their applications to Terahertz Emitters and Detectors	菅原 大樹 Hiroki Sugawara	2018	
光電子融合フォトミキサトランジスタとその高効率光ーミリ波帯周波数下方変換への応用に関する研究 Study on Photonic-Electronic Convergence Photomixer Transistor and Its Application to High-Efficiency Optical-to-Millimeter-Wave Frequency Down-Conversion	西村　和樹 Kazuki Nishimura	2018	

8. 叙勲・受賞・表彰 / Honors, awards, and prizes

氏名 Name	叙勲・受賞・表彰名	年　月 日 Date	論　文　題　目 Title
佐藤　昭 Akira Satou	(財)宮城産業科学振興基金平成 25 年度研究奨励賞 FY2012 Young Research Investigator Award, the Miyagi Industrial and Science Foundation	2013.6.14	グラフェンの非平衡キャリアダイナミックスの高精度モデル化とそのテラヘルツレーザーへの応用 High-Precision Modeling of Nonequilibrium Carrier Dynamics in Graphene and Its Application to Terahertz Lasers
渡辺　隆之 Takayuki Watanabe	RIEC Award 東北大学学生賞 RIEC Award for Tohoku University Students	2013.11.21	グラフェン内表面プラズモンポラリトンによるテラヘルツ巨大利得増強作用に関する研究 Study on Terahertz Giant Gain Enhancement in Graphene Surface Plasmon Polariton
尾辻　泰一 Taiichi Othuji	IEEE Fellow	2014.1.1	半導体プラズモニック集積デバイス技術とそのテラヘルツセンシング応用 Contributions to plasmonic semiconductor integrated device technology for terahertz sensing
小林　健吾 Kengo Kobayashi	第 36 回（2014 年春季）応用物理学会講演奨励賞 Young Scientist Presentation Award, The 36th JSAP Spring Meeting 2014	2014.5.8	多層 SiCN を用いて作製した傾斜型フィールドプレートによる AlGaN/GaN HEMT における電流コラプスの抑制 Suppression of Current Collapse in AlGaN/GaN HEMT by Slant Field Plate Fabricated with SiCN Multilayers
佐藤　昭 Akira Satou	The 3rd Russia–Japan–USA Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies (RJUSE TeraTech-2014) ・ Outstanding Invited Talk	2014.6.20	Ultrahigh Sensitive Sub-Terahertz Plasmonic Detector Based on Asymmetric Dual-Grating-Gate HEMT
渡辺　隆之 Takayuki Watanabe	公益財団法人井上科学振興財団 第 31 回井上研究奨励賞 31st Inoue Research Award for Young Scientists, Inoue Foundation for Science	2014.12.2	半導体二次元電子系のプラズモンを利用したコヒーレントテラヘルツ波の発生・増幅に関する研究 Study on Emission and Amplification of Coherent Terahertz Wave using Plasmon in Semiconductor 2D Electron System
YADAV Deepika	電子情報通信学会エレクトロニクスソサエティ平成 27 年度電子デバイス研究専門委員会会学生発表奨励賞 2012FSY Excellent Student Paper-Presentation Award from the Technical Committee on Electron Devices	2016.1.21	グラフェン二重層ヘテロ構造を用いたテラヘルツ放出または検出に関する研究 Emission and detection of terahertz radiation using double-graphene-layered heterostructures

細谷　友崇 Tomotaka Hosotani	東北大学工学部長賞 Award fro Dean of School of Engineering, Tohoku University	2016.3.25	N.A.
佐藤　昭 Akira Satou	16th International Conference on Nanotechnology (IEEE NANO 2016)・Best Poster Award	2016.8.25	ナノ構造非対称二重格子ゲート・プラズモニック THz 検出器：アレイ化とシリコンレンズ集積による外部結合効率の向上 Nanostructured Asymmetric Dual-Grating-Gate Plasmonic THz Detectors: Enhancement of External Coupling Efficiency by Array Configuration and Silicon-Lens Integration
YADAV Deepika	5th Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies (RJUSE TeraTech-2016) ・ Best Student Oral-Presentation Award	2016.11.4	グラフェン二重層ファンデルワールスヘテロ構造によるテラヘルツ放射および検出 Double Graphene Layer van der Waals Heterostructures for Terahertz Emission and Detection
糟谷　文月 Fuzuki Kasuya	5th Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies (RJUSE TeraTech-2016) ・ Best Student Oral-Presentation Award	2016.11.4	光結合効率の向上を目的とした、非対称二重格子ゲート高電子移動度トランジスタのアレイ化とシリコンレンズ集積 Array Configuration and Silicon-Lens Integration of Asymmetric Dual-Grating-Gate HEMT for Improvement of Light Coupling Efficiency
細谷　友崇 Tomotaka Hosotani	電子情報通信学会・電子デバイス研究専門委員会　2016 年 12 月研究会 論文発表奨励賞 Incentive Award for Young Researcher, IEICE Electron Device Meeting (Sep. 2016)	2017.1.10	直列アレイ化とレンズ集積による非対称二重格子ゲート高電子移動度トランジスタのテラヘルツ波受光効率向上 Enhancement of THz Light Coupling Efficiency by Series Array and Lens Integration of Asymmetric Dual-Grating-Gate HEMTs
YADAV Deepika	日本学術振興会主催 9th HOPE Meeting with Nobel Laureates・Best Presentation Award	2017.3.2	グラフェン/h-BN/グラフェン ファンデルワールスヘテロ構造によるテラヘルツレーザーおよび検出素子 Terahertz lasers and photodetectors based on graphene/h-BN/graphene van der Waals Heterostructures
YADAV Deepika	42nd International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW-THz 2017) ・ Outstanding Student Paper Award, the Third Place	2017.8.30	電流注入型デュアルゲート・グラフェンチャネル FET に基づくテラヘルツ発光トランジスタ Terahertz Light Emitting Transistor based on Current Injection Dual-Gate Graphene-Channel FET
尾辻 泰一 Taiichi Othuji	第 12 回応用物理学会フェロー表彰 Fellow, JSAP (Japan Society of Applied Physics)	2018.5.10	二次元プラズモンの共鳴現象を用いたテラヘルツ素子の先駆的研究 pioneering research on terahertz devices utlizing two-dimensional plasmon resonance phenomena

鈴木　雅也 Masaya Suzuki	the 26th Asia-Pacific Workshop on Fundamental and Applications of Advanced Semiconductor Devices (AWAD 2018)・Young Researcher Award	2018.7.4	格子ゲート型プラズモニックテラヘルツ検出素子への二次元回折格子構造の導入による偏光特性の制御 Introduction of 2D diffraction grating into grating-gate plasmonic THz detector for controlling Its polarization characteristics
尾辻　泰一 Taiichi Othuji	2019 年度米国光学会フェロー表彰 Fellow of the OSA (Optical Society of America)	2018.10.22	半導体ナノ・ヘテロ構造における二次元プラズモンおよび二次元電子系を利用したテラヘルツ波放射・検出に関する先駆的研究 pioneering contributions to terahertz emission and detection exploiting two-dimensional plasmonic and electronic systems with semiconductor nano- and hetero-structures
鈴木　雅也 Masaya Suzuki	電子情報通信学会電子デバイス研究専門委員会（ED 研）・論文発表奨励賞 the Encouragement Prize for Best Student Paper Presentations at the Electronic Devices Research Committee Technical Meetings, Institute of Electronics, Information, and Communication (IEICE), Japan	2019.1.28	格子ゲート構造プラズモニック THz ディテクタの偏光特性制御のための二次元ナノアンテナ導入 2D Nanoantennas for Controlling Polarization Characteristics of a Grating-Gate Plasmonic THz Detector

9. その他 / Others