

Ⅲ) 研究成果の公表の状況

1) 論文

1-1 原著論文

(査読有り総説・レビューを含む) (13 件, うち国際共著 9 件)

1. Arven I. Cafe, Alexander De Los Reyes, Lorenzo Lopez, Horace Andrew Husay, Maria Angela Faustino, Valynn Katrine Mag-usara, Masahiko Tani, Arnel Salvador, Armando Somintac, Elmer Estacio, “Non-contact detection of a naturally formed oxide layer on copper metal surface using terahertz time-domain spectroscopy,” *Current Applied Physics*, **50**, pp. 61-68 (Published online: 17 March 2023) (DOI: 10.1016/j.cap.2023.03.007)
2. Hideyuki Uematsu, Shunya Nishimura, Ayaka Yamaguchi, Fumihiro Nishimura, Shinji Sugihara, Naoki Sugiura, Takeshi Ishikawa, Takahiro Hayashi, Masachika Yamane, Kazumasa Kawabe, Yukihiro Ozaki, Shuichi Tanoue: “Crystal structures of polyamide 6 at the interphase and around carbon fiber and mechanical properties of their composites”, *Polymer*, **275**(9), 125907 (2023) (Published online: 05 April 2023) (DOI: 10.1016/j.polymer.2023.125907)
3. M. H. Balgos, N. Hayazawa, M. Tani, T. Tanaka: “Megahertz repetition rate-based lock-in detection scheme for rapid data acquisition in terahertz time domain spectroscopy”, *Review of Scientific Instruments*, **94**, 043002 (Published: 6 April 2023) (DOI: 10.1063/5.0138938)
4. Jessica Afalla, Joselito Muldera, Semmi Takamizawa, Takumi Fukuda, Keiji Ueno, Masahiko Tani, Muneaki Hase, “Terahertz emission from transient currents and coherent phonons in layered MoSe₂ and WSe₂”, *Journal of Applied Physics*, **33**, 165103 (Published: 24 April 2023). (DOI: 10.1063/5.0146489)
5. Setsuko Komatsu, Kazuna Hamada, Takashi Furuya, Takumi Nishiuchi, and Masahiko Tani, “Membrane Proteomics to Understand Enhancement Effects of Millimeter-Wave Irradiation on Wheat Root under Flooding Stress”, *International Journal of Molecular Sciences*, **24**, 9014 (Published: 19 May 2023) (DOI: /10.3390/ijms24109014)
6. Shojiro Kimura, Hiroaki Onishi, Kouichi Okunishi, Mitsuru Akaki, Yasuo Narumi, Masayuki Hagiwara, Koichi Kindo, Hikomitsu Kikuchi, “Magnetic Excitation in the $S = 1/2$ Ising-like Antiferromagnetic Chain CsCoCl₃ in Longitudinal Magnetic Fields Studied by High-field ESR Measurements” (Editor’s Choice), *J. Phys. Soc. Jpn.*, **92**, 094701 (9 pages) (2023) (Published online: 28 July 2023) (DOI: 10.7566/JPSJ.92.094701)

7. E. Khutoryan, A. Kuleshov, S. Ponomarenko, K. Lukin, Y. Tatematsu and M. Tani, "The Regime of the Efficiency Increase by Use of Long Circuits in the THz Cherenkov Oscillator," *IEEE Transactions on Electron Devices*, **70**(10), pp. 5319-5326 (2023) (Published 14 August 2023) (DOI: 10.1109/TED.2023.3301841)
8. Kyosuke Saeki and Takayuki Makino, "Evaluation of optical constants in oxide thin films using machine learning", *Japanese Journal of Applied Physics*, **62**, 081002 (2023) (Published online: 23 August 2023) (DOI 10.35848/1347-4065/acea4b)
9. Mary Clare Escaño, Tien Quang Nguyen, Masahiko Tani, "Spin-to-charge conversion origin in graphene on ferromagnetic substrate revealed: Rashba effects at Dirac point" *Solid State Communications*, **376**, 115364 (2023) (Published online: 17 October 2023) (DOI: 10.1016/j.ssc.2023.115364)
10. T. Nishiwaki, Z. Sun, D. Oka, T. Fukumura, T. Makino, "Photoreflectance spectroscopy of BiOCl epitaxial thin films", *Japanese Journal of Applied Physics*, **63**, 02SP09 (2024) (Published online: 28 December 2023) (DOI 10.35848/1347-4065/ad0306)
11. Takeshi Moriyasu, Masahiko Tani, Hideaki Kitahara, Takashi Furuya, Jessica Afalla, Toshiro Kohmoto, Daishiro Koide, Hiroki Sato, Mitsutaka Kumakura "Photocarrier dynamics in thick Si film studied by optical pump-terahertz probe spectroscopy", *Optics Communications*, **554**, 130139 (2023) (Published online: 17 November 2023) (DOI: 10.1016/j.optcom.2023.130139)
12. Lourdes Nicole Dela Rosa, Kenneth Jay Alaba, Neil Irvin Cabello, Regine Loberternos, John Paul Ferrolino, Ivan Cedrick Verona, Vince Paul Juguilon, Arnel Salvador, Armando Somintac, Hideaki Kitahara, Alexander De Los Reyes, Hannah Bardolaza, Masahiko Tani, Elmer Estacio, "Terahertz emission improvement of gallium-arsenide-based bowtie photoconductive antenna by AAO-patterned gold nanoparticles integration on the photoconducting gap", *Optical Materials*, **150**, 115212 (2023) (Published online: 15 March 2024) (DOI: 10.1016/j.optmat.2024.115212)
13. Hannah R. Bardolaza, John Paul R. Ferrolino, Ivan Cedrick M. Verona, Vince Paul P. Juguilon, Lourdes Nicole F. Dela Rosa, Miezal L. Talara, Hideaki Kitahara, Armando S. Somintac, Arnel A. Salvador, Neil Irvin F. Cabello, Alexander E. De Los Reyes, Masahiko Tani, and Elmer S. Estacio, "Terahertz emission characteristics of a metasurface-enhanced spintronic terahertz emitter", *Journal of Materials Science: Materials in Electronics*, **35**, 605 (2023) (Published online: 19 March 2024) (DOI: 10.1007/s10854-024-12378-x)

1 – 2 国際会議論文 (査読あり) (5 件)

1. Hikomitsu Kikuchi, Yutaka Fujii, Yuya Ishikawa, Akira Matsuo, Koichi Kindo, Utami Widyaiswari and Isao Watanabe “Magnetic Plateaux of the Frustrated Magnet, Pseudomalachite”, JPS Conf. Proc., **38**, 011127 (6 pages) (2023) (Published: 23 May 2023) (DOI: 10.7566/JPSCP.38.011127)
2. Kanata Hayashi, Yuya Ishikawa, Takayuki Asano, Hajime Yamamoto, Hiroyuki Kimura, Terutoshi Sakakura, Yukio Noda, Yutaka Fujii, Seitaro Mitsudo, “ESR study of $\text{Ca}_2\text{Cu}(\text{OH})_4[\text{B}(\text{OH})_4]_2$, a Low-dimensional Antiferromagnet with $S=1/2$ ”, JPS Conf. Proc., **38**, 011144 (6 pages) (2023) (Published: 23 May 2023) (DOI: 10.7566/JPSCP.38.011144)
3. Yutaka Fujii, Yusuke Takahashi, Kaoru Maruyama, Kohei Nakagawa, Yuya Ishikawa, Konami Izumi, Naoko Sakai, Kunio Taguma, “ ^{19}F -NMR Study of Spin-1/2 Antiferromagnetic Chain $\text{D-F}_5\text{PNN}$ with a Single Crystal Crossing Critical Field Region”, JPS Conf. Proc., **38**, 011147 (7 pages) (2023) (Published: 23 May 2023) (DOI: 10.7566/JPSCP.38.011147)
4. Yuya Ishikawa, Hideyuki Takahashi, Akira Okutani, Kanata Hayashi, Tomonori Sano, Kouhei Hirozawa, Takero Ito, Shota Masuda, Eiji Ohmichi, Hitoshi Ohta, Yoshinori Tatematsu, Takayuki Asano, Hikomitsu Kikuchi, Yutaka Fujii, Seitaro Mitsudo, “Multifrequency Electron Spin Resonance Using a High-Power Light Source Compact Gyrotron and Force-Detection System”, JPS Conf. Proc., **38**, 011192 (6 pages) (2023) (Published: 23 May 2023) (DOI: 10.7566/JPSCP.38.011192)
5. Yuji Inagaki, Takahiro Sakurai, Makoto Yoshida, Susumui Okubo, Hikomitsu Kikuchi, Keiichi Koyama, Hitoshi Ohta, “High-field ESR Spectroscopy of a Quantum Spin Liquid System CuHpCl ”, JPS Conf. Proc., **38**, 011141 (6 pages) (2023) (Published: 23 May 2023) (DOI: 10.7566/JPSCP.38.011141)

1 – 3 国際会議論文 (査読無し) (9 件)

1. Regine Loberternos, Hannah Bardolaza, Neil Irvin Cabello, Hideaki Kitahara, John Paul Ferrolino, Ivan Cedrick Verona, Lourdes Nicole Dela Rosa, Vince Paul Juguilon, Alexander De Los Reyes, Arnel Salvador, Armando Somintac, Masahiko Tani, Elmer Estacio: “Terahertz Emission Enhancement Of Gallium-Arsenide-Based Photoconductive Antennas With AAO-Patterned Gold Nanoparticles”, Paper No. Mo-PM1-3-5, 48th Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz 2023, 17 -22 September 2023, Montreal, Quebec, Canada)

2. Shuang Liu, Verdad C. Agulto, Toshiyuki Iwamoto, Kosaku Kato, Valynn Katrine Mag-usara, Masato Ota, Shamika Dolas, Nathan Newman, Liviu Nedelcu, Masahiko Tani, Masashi Yoshimura, Makoto Nakajima: “Temperature Dependence Of The Conductivity Of InSb Measured By Terahertz Time-Domain Spectroscopy”, Paper No. Mo-P2-13, 48th Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz 2023, 17 -22 September 2023, Montreal, Quebec, Canada)
3. Hideaki Kitahara, Katsuyuki Ishii, Miezal Talara, Takashi Furuya, Mary Escaño, Masahiko Tani, Dmitry Bulgarevich, Dongfeng He, Makoto Watanabe: “Improvement In The Detection Efficiency Of Terahertz (THz) Time-domain Spectroscopy (TDS) By Applying An Alternating Magnetic Field Bias In Spintronic Emitter”, Paper No. Tu-P1-15, 48th Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz 2023, 17 -22 September 2023, Montreal, Quebec, Canada)
4. Miezal Talara, Dmitry Bulgarevich, Kana Kobayashi, Hideaki Kitahara, Takashi Furuya, Mary Clare Escaño, Makoto Watanabe, Masahiko Tani: “Impact Of Antenna Metal’s Thicknesses And Structures On Terahertz (THz) Wave Generation Performance Of Spintronic Emitters”, Paper No. Tu-P1-17, 48th Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz 2023, 17 -22 September 2023, Montreal, Quebec, Canada)
5. Fumiyoshi Kuwashima, Mona Jarrahi, Semih Cakmakyapan, Osamu Morikawa, Takuya Shirao, Kazuyuki Iwao, Kazuyoshi Kurihara, Hideaki Kitahara, Takeshi Furuya, Kenji Wada, Yuki Kawakami⁷, Takeshi Moriyasu, Makoto Nakajima, Masahiko Tani: “Highly Efficient THz Waves Using Laser Chaos”, Paper No. Th-P1-23, 48th Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz 2023, 17 -22 September 2023, Montreal, Quebec, Canada)
6. Yoshinori Tatematsu, Koshido, Masafumi Fukunari and Yuusuke Yamaguchi, “Investigation of the cause of two-beam radiation in a multi-frequency Gaussian beam output gyrotron FU CW GVII”, Paper No. Mo-P1-27, 48th International Conference on Infrared, Millimeter, and Terahertz Waves, (IRMMW-THz 2023, 17 -22 September 2023, Montreal, Quebec, Canada)
7. Yuusuke Yamaguchi, Masafumi Fukunari and Yoshinori Tatematsu, “Temperature Control of Irradiated Biological Samples with Pulse Repetition Frequency Modulation of a Gyrotron”, Paper No. Tu-P1-26, 2023 48th International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz 2023, 17 -22 September 2023, Montreal, Quebec, Canada)

8. Masahiko Tani, Miezal Talara, Dmitry Bulgarevich, Valynn K. Mag-usara, Mary C. Escaño, Hideaki Kitahara, Takashi Furuya, Makoto Nakajima, Makoto Watanabe, Garik Torosyan, René Beigang, “Optimization of terahertz emission from spintronic Fe/Pt hetero-structures”, Proceedings Volume PC12683, Terahertz Emitters, Receivers, and Applications XIV; PC1268302 (2023), (DOI: 10.1117/12.2681756)
9. Maya Mizuno, Yoshinori Tatematsu, Masafumi Fukunari, Shota Yamazaki, Yukihiisa Suzuki, Atsushi Sugimoto, Tomoaki Nagaoka, “Fundamental Study on THz Irradiation Power Control Using Wire Grids”, No. 7, Proceedings of 5th International Workshop on Photonics applied to Electromagnetic Measurement (PEM2023) (27, November, 2023, Hokkaido University, Japan)

1 - 4 総説・レビュー・その他の論文等 (4 件)

1. 谷正彦, “テラヘルツ時間領域分光法とその応用” (産学連携プロジェクト 151), 北陸経済研究 2004 年 1 月号, pp.36-37 (2023 年 12 月 25 日発行), 解説 (査読無)
2. Escaño Mary Clare, ” 2023 年度若手女性研究者優秀賞を受賞について”, 表面と真空, **67**, 133 (Published: 10 March 2024) (DOI: 10.1380/vss.67.133)
3. 菊池彦光, “新奇な磁性を示すスピン系モデル物質の開拓” (受賞講演), 電子スピンサイエンス, **22** (Spring), 12–19 (2024) (published: 15 March 2024), 総説 (査読無)
4. 藤井裕, “極低温高周波磁気共鳴装置の開発と応用” (研究室訪問), 電子スピンサイエンス, **22** (Spring), 43–48 (2024) (published: 15 March 2024), 総説 (査読無)