

チーム名: テラヘルツイメージング研究チーム

(1) 原著論文 (accept) を含む / Original Papers

1. S. Yamazaki, M. Harata, T. Idehara, K. Konagaya, H. Hoshina, Y. Ogawa “Actin polymerization is activated by terahertz irradiation”, Scientific Reports, Submitted, (2017).
2. I. Yoshimine, Y. Y. Tanaka, T. Shimura and T. Satoh, “Unidirectional control of optically induced spin waves”, EPL (Europhysics Letters), Vol. 117, No.6, 67001, (2017).
3. T. Nagasaki *et al.*, “GroundBIRD - observation of CMB polarization with a high-speed scanning and MKIDs”, J. Low Temperature Phys., submitted, (2017).
4. H. Kutsuma *et al.*, “Optimization of geomagnetic shielding for MKIDs mounted on rotating cryostat”, JLTP に投稿中, JLTP-D-17-00329.
5. N. Yaekashiwa, S. Otsuki, S. Hayashi, and K. Kawase, “Investigation of the non-thermal effects of exposing cells to 70-300 GHz irradiation using a widely tunable source”, Journal of Radiation Research, Vol. 59, Issue 2, pp. 116–121, (2018).
6. M. Mizuno, N. Yaekashiwa, and S. Watanabe, “Analysis of Dermal Composite Conditions Using Collagen Absorption Characteristics in THz Range”, Biomedical Optics Express, Vol. 9, No. 5, 2277-2283(2018).
7. D. Marlina, H. Sato, H. Hoshina, Y. Ozaki, “Intermolecular interactions of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) (P(HB-co-HV)) with PHB-type crystal structure and PHV-type crystal structure studied by low-frequency Raman and terahertz spectroscopies”, Polymer, Vol. 135, 17, pp. 331-337 (2018).
8. C. Funaki, S. Yamamoto, H. Hoshina, Y. Ozaki, H. Sato, “Three different kinds of weak C-H/O^{1/4}C inter- and intramolecular interactions in poly(ε-caprolactone) studied by using terahertz spectroscopy, infrared spectroscopy and quantum chemical calculations”, Polymer, Vol. 137, 14, pp. 245-254 (2018).
9. H. Watanabe, S. Mima, S. Oguri, M. Yoshida, M. Hazumi, H. Ishino, H. Ishitsuka, A. Kibayashi, C. Otani, N. Sato, O. Tajima, N. Tomita, “Development of Novel Optical Coupling with Ground-side Absorption for Antenna-coupled Kinetic Inductance Detectors”, *IEICE Trans. Electron.* vol. **E100-C**, pp. 298-304, (2017).
10. **[Invited Paper]** M. Ohno, T. Irimatsugawa, H. Takahashi, C. Otani, S. Kohjiro, T. Yasumune, K. Takasaki, C. Ito, T. Ohnishi, S. Koyama, S. Hatakeyama, R. M. Thushara. Damayanthi, “Superconducting Transition Edge Sensor for Gamma-ray spectroscopy”, *IEICE Trans. Electron.* vol. **E100-C**, no. 3, pp. 283-290, (2017).
11. C. Funaki, T. Toyouchi, H. Hoshina, Y. Ozaki, H. Sato, “Terahertz imaging of the distribution of crystallinity and crystalline orientation in a poly (ε-caprolactone) film”, *Applied Spectroscopy*, 71(7), pp.1537-1542, (2017).

12. S. Yamamoto, M. Miyada, H. Sato, H. Hoshina, Y. Ozaki, “Low-Frequency Vibrational Modes of Poly(glycolic acid) and Thermal Expansion of Crystal Lattice Assigned Based on DFT-Spectral Simulation Aided with a Fragment Method”, *The Journal of Physical Chemistry Part B*, 121, pp.1128-1138, (2017).
13. J. Choi, R. Génova-Santos, M. Hattori, M. Hazumi, H. Ishitsuka, F. Kanno, K. Karatsu, K. Kiuchi, R. Koyano, H. Kutsuma, K. Lee, S. Mima, M. Minowa, M. Nagai, T. Nagasaki, M. Naruse, S. Oguri, T. Okada, C. Otani, R. Rebolo, J. Rubiño-Martín, Y. Sekimoto, J. Suzuki, T. Taino, O. Tajima, N. Tomita, T. Uchida, E. Won and M. Yoshida, “Status of the GroundBIRD Telescope”, *The European Physical Journal Conferences*, 168(2):01014, (2018).
14. C. Funaki, S. Yamamoto, H. Hoshina, Y. Ozaki, H. Sato, “Three different kinds of weak C-H/O^{1/4}C inter- and intramolecular interactions in poly(ϵ -caprolactone) studied by using terahertz spectroscopy, infrared spectroscopy and quantum chemical calculations”, *Polymer*, 137, (2018).
15. P. Tapsanit, M. Yamashita, C. Otani, S. Kongsuk, C. Ruttanpun, “Closed-form formulae of effective parameters of hyperbolic metamaterial made by stacked hole-array layers working at terahertz or microwave radiation”, *Journal of the Optical Society of America B*, Vol. 34, No. 9, pp. 1930-1936, (2017).

(2) 著書・解説など / Book Editions, Review Papers

1. 大谷知行, “テラヘルツ波によるイメージングとセンサー技術”, *化学工業*, 2017年7月号, pp. 47-51, (2017).
2. 大谷知行, 寶迫 巖, “テラヘルツ波応用のベンチマーク”, *国立国会図書館「冷戦後の科学技術政策の変容:科学技術に関する調査プロジェクト報告書 (Transformation of Science and Technology Policies in the Post-Cold War Era)*, pp. 121-142, (2017).
3. 大谷知行, “1.2.4 テラヘルツ波利用技術の動向と展望”, *平成28年度光技術動向調査報告書*, pp. 20-27, (2017).
4. 大谷知行, “総論 -テラヘルツ波利用の幕明け-”, *月刊OPTRONICS*, 2017年11月号 (Vol.36, No.431) pp.100-103, (2017).

(3) 招待講演 / Invited Talks

1. 大谷知行, “テラヘルツ波利用応用への期待”, *月刊オプトロニクスセミナー「テラヘルツ波利用の幕開け」*, 東京, 2月, (2018).
2. 大谷知行, “有機材料のテラヘルツ分光と物質改変の可能性”, *日本學術振興会第142委員会「インテリジェント有機材料部会 第136回研究会」*, 東京, 2月, (2018).
3. C. Otani, “Terahertz Sensing, Imaging and Applications”, *Seminar at Seoul University*,

Seoul, South Korea, January, (2018).

4. 美馬覚, “はじめての超伝導デバイスプロセス+国内インフラ紹介”, TIA かけはし事業「簡単・便利な超伝導計測」研究会, 和光市, 1 月, (2018).
5. C. Otani, “Terahertz Sensing, Imaging and Applications”, 1st NIP-RIKEN Joint Research Workshop, Quezon City, Philipines, November, (2017).
6. H. Hoshina, “Macromolecular Structures Investigated by Terahertz Waves”, MTSA2017, Okayama, Japan, November, (2017).
7. 保科宏道, 岩崎洋, 米谷英里子, 岡本真人, 大谷知行, “テラヘルツ分光によるポリマー結合水のダイナミクスの解明”, 第 5 回 光量子工学研究, 仙台, 11 月, (2017).
8. 大谷知行, “[基調講演]はじめに”, 第 9 回テラヘルツビジネスセミナー (THz-biz 2017), 東京, 10 月, (2017).
9. H. Hoshina, C. Otani, “Observation and manipulation of polymer structures by terahertz wave”, Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies (RJUSE TeraTech-2017), Troy, NY, USA, October, (2017).
10. C. Otani, H. Hoshina, H. Suzuki, M. Nagai, K. Kawase, A. Irizawa, G. Isoyama, “Enhanced crystallization of polymer by high-power THz radiatcion”, 25th International Conference on Advanced Laswer technologies (ALT'17), Pusan, South Korea, September, (2017).
11. 大谷知行, “テラヘルツ光～見えない光の魅力と可能性～”, 理研仙台一般公開, 仙台, 7 月, (2017).
12. 大谷知行, “宇宙の始まりを超伝導ミリ波検出器で探る”, 公開講演会「マイナス約 270 度の冷たい検出器で探る暑い宇宙と宇宙の創生」, 久留米, 7 月, (2017).
13. 大谷知行, “テラヘルツセンシング・イメージングと応用可能性～テラヘルツ光が拓くイノベーション～”, 理研イブニングセミナー, 東京, 6 月, (2017).
14. H. Hoshina, “Application of Terahertz Waves for Polymer Science”, The 6th Internationak Symposium on Organic and Inorganic Electronic Materials and Related Nanotechnologies (EM-NANO 2017), Fukui, Japan, June, (2017).
15. H. Hoshina, “Potential of THz waves for manipulating macromolecular structure”, THz Mansion Meeting, Newport, RI, USA, May, (2017).
16. 大谷知行, “ソフトマテリアルのテラヘルツ分光と応用”, 学振 182 委員会, 東京, 4 月, (2017).
17. C. Otani, “Crystallization of Polymer by Intense THz radiation”, 10th Asian Symposium on Intense Laser Science (ASILS10), Shahrja, UAE, March, (2017).

(4) 会議、シンポジウム、セミナー主催 / Meeting, Symposiums and Seminars

1. 第 9 回テラヘルツビジネスセミナー, 幕張, 10 月, (2017).

2. The 4th International Symposium on Microwave and Terahertz Science and Applications (MTSA 2017), Okayama, Japan, November, (2017).

(5) 特許出願 / Patent Applications

1. 保科宏道, 大谷知行, 岩崎洋, 米谷恵里子, 岡本真人, “樹脂組成物、並びにそれを用いた成形体及び多層構造体”, 特願 2017-169019, 平成 29 年 9 月 1 日.

(6) 特筆すべき事項・トピックス(雑誌表紙などの掲載記事) / Topics

1. Nature Photonics, “Terahertz surprises”, vol.12, 124-130, February 26, (2018).
2. Chemical & Engineering News, “Terahertz radiation probes polymers”, August 16, (2016).