

フォトン操作機能研究チーム / Innovation Photon Manipulation Research Team

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

1. Kato, R., Yano, T., Minamikawa, T., and Tanaka, T., "High-Sensitivity Hyperspectral Vibrational Imaging of Heart Tissues by Mid-Infrared Photothermal Microscopy", *Analytical Sciences* 38, 1497-1503 (2022).
2. Chen, M.K., Chu, C. H., Liu, X., Zhang, J., Sun, L., Yao, J., Fan, Y., Liang, Y., Yamaguchi, T., Tanaka, T., and Tsai, D.P., "Meta-Lens in the Sky", *IEEE Access* 10, 46552-46557 (2022).
3. Kato, R., Yano, T., and Tanaka, T., "Multi-modal vibrational analysis of blend polymers using mid-infrared photothermal and Raman microscopies", *Vibrational Spectroscopy* 118, 203333 (2022).
4. Kato, R., Uesugi, M., Komatsu, Y., Okamoto, F., Tanaka, T., Fumihisa Kitawaki, and Yano, T., "Highly Stable Polymer Coating on Silver Nanoparticles for Efficient Plasmonic Enhancement of Fluorescence", *ACS Omega* 7, 4286-4292 (2022).
5. Tanaka, T., Yano, T., and Kato, R., "Nanostructure-enhanced infrared spectroscopy", *Nanophotonics* 11, 2541-2561 (2022).

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

1. 田中拓男, "メタマテリアルと超高感度振動分光への応用", *電子情報通信学会誌* 105, 1454-1456 (2022).
2. 田中拓男, "三次元メタマテリアルによる高効率赤外吸収体と赤外分光応用", *光アイアンス* 33, 1-4 (2022).

(3) 招待講演 / Invited Talks

1. Kato, R., Yano, T., and Tanaka, T., "Visualizing enhanced optical fields of dielectric-based metamaterials by mid-infrared photothermal microscopy", *SPIE Photonics ASIA 2022 (Nantong, Jiangsu, China, China) (2022.12.5) (2022)*.
2. Oguchi, M.V., Hayazawa, N., and Tanaka, T., "Tip-enhanced Raman spectroscopy: Probing physicochemical properties at the nanoscale in ambient", *SPIE Photonics ASIA 2022 (Nantong, Jiangsu, China, China) (2022.12.5) (2022)*.
3. Tanaka, T., "Three-dimensional broadband metamaterial absorbers for IR gas molecules

- sensing", SPIE Optics+Photonics 2022 (San Diego, CA, USA) (2022.8.24) (2022).
4. Tanaka, T., "Metamaterials for infrared spectroscopy: metals vs dielectrics", SPIE Optics+Photonics 2022 (San Diego, CA, USA) (2022.8.21) (2022).
 5. Tanaka, T., "Metamaterial absorber and reflector for ultra-sensitive infrared spectroscopy", SPIE Optics+Photonics 2022 (San Diego, CA, USA) (2022.8.22) (2022).
 6. Oguchi, M. V. and Tanaka, T., "Characterization of monolayer graphene wrinkles via tip-enhanced Raman spectroscopy", SPIE Optics+Photonics 2022 (San Diego, CA, USA) (2022.8.24) (2022).
 7. Yano, T., Kato, R., and Tanaka, T., "Active plasmon-enhanced Raman microscopy for nanoscale control of chemical reactions", SPIE Optics+Photonics 2022 (San Diego, CA, USA) (2022.8.24) (2022).
 8. Yano, T., Kato, R., and Tanaka, T., "Ultrasensitive plasmonic sensing of single biomolecular complexes", SPIE Optics+Photonics 2022 (San Diego, CA, USA) (2022.8.21) (2022).
 9. Tanaka, T., "Metamaterial enhanced IR spectroscopy for solid, liquid, gas, and chiral materials", The 12th International Conference on Metamaterials, Photonic Crystals and Plasmonics (Torremolinos, Spain) (2022.7.21) (2022).
 10. Tanaka, T., "Metamaterials-Nanofluidics hybrid device for ultra-high-sensitive IR spectroscopy", The 9th Forum on New Materials (CIMTEC2022) (Montecatini Terme, Italy) (2022.6.25) (2022).
 11. Tanaka, T., "Metamaterials and their applications", NRC-RIKEN joint workshop on nanoscale quantum physics and devices (Closed) (Online,) (2022.5.11) (2022).
 12. Tanaka, T., "Metamaterials for IR spectroscopy", Global Nanophotonics 2022 (Core-to-Core Symposium GNP2022) (Osaka International Convention Center, Grand Cube, Osaka, Japan) (2022.3.15) (2022).
 13. Kato, R., Yano, T., and Tanaka, T., "Visualizing Optical Fields of Dielectric-Based Metamaterials via Mid-Infrared Photothermal Imaging", Global Nanophotonics 2022 (Core-to-Core Symposium GNP2022) (Osaka International Convention Center, Grand Cube, Osaka, Japan) (2022.3.15) (2022).
 14. Yano, T., Kato, R., and Tanaka, T., "Ultrasensitive plasmonic sensing of single biomolecular complexes", Global Nanophotonics 2022 (Core-to-Core Symposium GNP2022) (Osaka International Convention Center, Grand Cube, Osaka, Japan) (2022.3.14) (2022).

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

1. SPIE Photonics ASIA 2022, "Plasmonics VII", 2022 年 10 月 14 (2022).

2. SPIE Optics+Photonics 2022, “ Plasmonics: Design, Materials, Fabrication, Characterization, and Applications XX”, 8 月 21 日 (2022).

(5) 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. 田中拓男, “【ほのぼの物理】#5「メタマテリアル」 シャコ”, Youtube 東京大学 ほのぼの物理 2022 年 5 月 16 日. (<https://www.youtube.com/watch?v=HcDExl1G7b4>)