

## フoton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. D. Zhang, B. Ranjan, T. Tanaka, and K. Sugioka, "Underwater persistent bubble-assisted femtosecond laser ablation for hierarchical micro/nanostructuring", *Int. J. Extrem. Manuf.* 2, 15001, (2020).
2. D. Zhang, B. Ranjan, T. Tanaka, and K. Sugioka, "Carbonized Hybrid Micro/Nanostructured Metasurfaces Produced by Femtosecond Laser Ablation in Organic Solvents for Biomimetic Antireflective Surfaces", *ACS Appl. Nano Mater.* 3, 2, 1855-1871, (2020).
3. M. V. Balois, N. Hayazawa, S. Yasuda, K. Ikeda, B. Yang, E. Kazuma, Y. Yokota, Y. Kim, and T. Tanaka, "Visualization of subnanometric local phonon modes in a plasmonic nanocavity via tip-enhanced Raman spectroscopy in ambient", *NPJ 2D Mater. Appl.* 3, 38 (2019).
4. D.-S. Su, D. P. Tsai, T.-J. Yen, and T. Tanaka, "Ultrasensitive and Selective Gas Sensor Based on a Channel Plasmonic Structure with an Enormous Hot-spot Region", *ACS Sensors* 4, pp. 2900-2907, (2019).
5. T. Matsukata, N. Matthaiakakis, T. Yano, M. Hada, T. Tanaka, N. Yamamoto, and T. Sannomiya, "Selection and Visualization of Degenerate Magnetic and Electric Multipoles up to Radial Higher Orders by Cathodoluminescence", *ACS Photonics* 6, pp. 2320-2326, (2019).
6. R. Mudachathi and T. Tanaka, "3D Conical Helix Metamaterial based Isotropic Broadband Perfect Light Absorber", *Opt. Express* 27, pp. 26369-26376, (2019).
7. A. Takezawa, X. Zhang, T. Tanaka, and M. Kitamura, "Topology optimization of a porous unit cell in a fluid flow considering Forchheimer drag", *Int. J. Comput. Fluid. D.* 34, pp. 50-60, (2020).
8. Y. Kikuchi and T. Tanaka, "Strengthen of magnetic anisotropy of Au/Co/Au nanostructure by surface plasmon resonance", *Sci. Rep.* 9, 8630, (2019).

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

1. M. V. Balois, N. Hayazawa, C. Chen, E. Kazuma, Y. Yokota, Y. Kim, and T. Tanaka, "Development of tip-enhanced Raman spectroscopy based on a scanning tunneling microscope in a controlled ambient environment", *Jpn. J. Appl. Phys.* 58, SI0801, (2019).
2. 田中拓男, "光メタマテリアル", *光アライアンス* 30, pp. 1-6, (2019).

## (3) 招待講演 / Invited Talks

1. 田中拓男, "光メタマテリアル", 2020年電子情報通信学会 (広島大学, 東広島市, 広島), 3月18日, (2020).
2. T. Tanaka, "Fabrication Techniques and Applications of Three-dimensional Metamaterials", 4th POSTECH Nanophotonics Workshop, Korea, (2019).

3. T. Tanaka, “Metamaterials-enhanced ultra-sensitive vibrational spectroscopy using polarization, nanofluidics, and chirality”, Global Nanophotonics 2019, Taiwan, (2019).
4. T. Tanaka, “Metamaterials + Spectroscopy”, OptoX-Nano 2019, Japan, (2019).
5. T. Tanaka, “Metamaterials for sensing applications”, iSPN2019, Japan, (2019).
6. T. Tanaka, “Metamaterial absorber: using photons as a sensing probe”, SPIE Photonics ASIA, China, (2019).
7. 田中拓男, “光メタマテリアル - これまでの光学, これからの光学-”, 徳島大学pLED 研究所 キックオフセミナー, 徳島, (2019).
8. T. Tanaka, “Plasmon assisted improvement of figure of merit of magneto-optical Kerr effect and magnetic anisotropy in Au/Co/Au multilayered nanorectangular array structures”, META19, Portugal, (2019).
9. T. Tanaka, “Metamaterial absorber for ultrasensitive spectroscopy”, Optics and Photonics Congress 2019, Korea, (2019).
10. 田中拓男, “メタマテリアル-ナノの構造で光を操る-”, 同志社大学 ハリス理化学研究所 イブニングセミナー, 京都, (2019).
11. 田中拓男, “ナノフォトニクス”, 日本オプトメカトロニクス協会2019年光応用技術研修会, 東京, (2019).
12. T. Tanaka, “Metamaterials: fundamentals, fabrication techniques, and applications”, NIP Seminar, The Philippines, (2019).
13. T. Tanaka, “Metamaterial Absorber with Nanofluidic Channel for Attomole Nanoconfined Molecular Detection”, MRS 2019 Spring, U.S.A., (2019).

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

1. The 3rd RIKEN-nCOMS Joint Symposium, 和光, 8月19日, (2019).