FY2022

超高速分子計測研究チーム ／ Ultrafast Spectroscopy Research Team

（1）原著論文（accept）を含む ／ Original Papers

1. Iwamura, M., Urayama, R., Nozaki, K., Liu, L., Kuramochi, H., Takeuchi, S., Tahara, T., "Spectroscopic mapping of the gold complex oligomers (dimer, trimer, tetramer, and pentamer) by excited-state coherent nuclear wavepacket motion in aqueous solution", Phys. Chem. Chem. Phys. 25, 966-974 (2022).
2. Ahmed, M., Nihonyanagi, S., Tahara, T., "Ultrafast vibrational dynamics of the free OD at the air/water interface: Negligible isotopic dilution effect but large isotope substitution effect", J. Chem. Phys. 156, 224701/1-9 (2022).
3. Hanaoka, K., Iwaki, S., Yagi, K., Myochin, T., Ikeno, T., Ohno, H., Sasaki, E., Komatsu, T., Ueno, T., Uchigashima, M., Mikuni, T., Tainaka, K., Tahara, S., Takeuchi, S., Tahara, T., Uchiyama, M., Nagano, T., Urano, Y., "A general design strategy to precisely control the emission of fluorophores via a twisted intramolecular charge transfer (TICT) process", J. Am. Chem. Soc. 144, 19778-19790 (2022).
4. Ishiyama, T., Tahara, T., Morita, A., "Why the photochemical reaction of phenol becomes ultrafast at the air-water interface: The effect of surface hydration", J. Am. Chem. Soc. 144, 6321-6325 (2022).
5. Matsuzaki, K., Tahara, T., "Superresolution concentration measurement realized by sub-shot noise absorption spectroscopy", Nat. Commun. 13, 953/1-8 (2022).

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

1. 倉持光，田原太平，" フェムト秒時間分解時間領域ラマン分光で観る光化学反応の超高速構造ダイナミクス"，光化学, 53 (3), 132-139 (2022).
2. 倉持光，竹内佐年，岩村宗高，田原太平，" フェムト秒時間分解インパルシブ誘導ラマン分光による光誘起結合生成ダイナミクスの実時間構造追跡"，光学, 51 (1), 8-14 (2022).

（3）招待講演 ／ Invited Talks

1. 松崎維信，" 量子もつれ光を用いた超高感度吸収分光法の実現とその応用"，第 70 回応用物理学会春季学術講演会，東京（ハイブリッド）, 3 月 15 日-18 日, (2023).
2. Tahara, T., "Ultrafast dynamics at the water interfaces revealed by time-resolved phase-sensitive nonlinear spectroscopy", Seminar, The Hebrew University of Jerusalem, Israel,

February (2023).

3. 松崎維信, “ 量子もつれ光を用いたショット・ノイズ゛限界を超える超高感度吸収分光測定”, レーザー学会学術講演会第 43 回年次大会, 名古屋, 1 月 19 日, (2023).
4. Tahara, T., “Structure and ultrafast dynamics at the water interface revealed by phase-sensitive nonlinear spectroscopy”, Guest Seminar, Weizmann Institute of Science, Israel, January (2023).
5. Mohammed, A., Nihonyanagi, S., Tahara, T., “Mechanism of vibrational relaxation of free OH/OD at the water surface by TR-HD-VSFG spectroscopy”, Saitama SFG Colloquium II, さいたま市, 11 月 22 日, (2022).
6. 松崎維信, “ 量子もつれ光を光源とするサブ・ショット・ノイズ吸収分光法”, 理研・開拓研究本部ワークショップ, 箱根町, 11 月 14 日, (2022).
7. 松崎維信, “ 量子もつれ光を光源とする超高感度吸収分光装置の開発“, 九州大学加納研究室セミナー（オンライン）, 福岡市, 11 月 11 日, (2022).
8. Nihonyanagi, S., “Studies of buried material interfaces using heterodyne-detected vibrational sum frequency generation spectroscopy”, 2022 RIKEN-NCHU Joint Symposium, Online, August (2022).
9. Tahara, T., “Ultrafast dynamics at the water interfaces revealed by femtosecond phase-sensitive nonlinear vibrational spectroscopy”, 27th International Conference on Raman Spectroscopy (XXVII ICORS), USA, August (2022) (Keynote).
10. Matsuzaki, K., “Ultrasensitive absorption spectroscopy realized by entangled photon pairs”, The 13th International Conference on Information Optics and Photonics (CIOP 2022), China, Webinar, August (2022).
11. Tahara, T., “Ultrafast Dynamics at Aqueous Interface Revealed by Heterodyne-Detected Vibrational Sum-Frequency Generation Spectroscopy”, Gordon Research Conference on Water and Aqueous Solutions, USA, July (2022).
12. Tahara, T., “Vibrational relaxation of OH stretch at the air/water interface”, CMDS2022, USA, June (2022).
13. Nihonyanagi, S., “Structure and dynamics of water at interfaces”, Annual Summer School Solvation Science, Germany, June (2022).
14. Tahara, T., “Ultrafast chemical dynamics at the water surface revealed by femtosecond time-resolved phase-sensitive nonlinear spectroscopy”, Symposium “Multiscale Chemistry and Dynamics at Surfaces and Interfaces”, Spring 2022 American Chemical Society (ACS) meeting, USA, March, (2022).
15. Tahara, T., “A chemical reaction becomes ultrafast at the water surface”, The 16th biennial DAE – BRNS Trombay Symposium on Radiation & Photochemistry (TSRP-2022), India, Webinar, January, (2022).

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

1. Seminar, “Time-resolved spectroscopy techniques and applications to the field of life science”, 和光, 1 月 13 日（2023).
2. Seminar, “Surface SFG spectroscopy of water”, 和光, 5 月 24 日（2022).
3. Seminar, “Semiconductor Photocatalysts for Artificial Photosynthesis: Operando Characterization under Water”, 和光, 4 月 28 日（2022).
4. Seminar, “Developments of density functional theory and integral equation theory for solvation and phase equilibrium”, 和光, 4 月 25 日（2022).
5. Seminar, “Development of a highly stable Fourier transform limited picosecond time-resolved Raman spectrometer: vibrational dynamics of transient molecules near metal nanoparticles”, 和光, 4 月 22 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. J. Am. Chem. Soc. Vol. 144, No. 14, 2022 年 4 月 4 日発行 Supplementary Cover
2. J. Chem. Phys. Vol. 156, No. 22, 2022 年 6 月 8 日発行　Front Cover, Editor’s pick
3. Phys. Chem. Chem. Phys. Vol. 25, 2022 年 11 月 30 日発行 Inside Back Cover, Hot Paper