

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. M. Ahmed, K. Inoue, S. Nihonyanagi, and T. Tahara: "Hidden isolated OH at the charged hydrophobic interface revealed by two-dimensional heterodyne-detected VSFG spectroscopy", *Angew. Chem. Int. Ed.* 59, 9498-9505, (2020).
2. P. Kumar, H. Kuramochi, S. Takeuchi, and T. Tahara: "Time-domain observation of surface-enhanced coherent Raman scattering with 10^5 - 10^6 enhancement", *J. Phys. Chem. Lett.* 11 6305-6311, (2020).
3. K. Kojima, R. Kurihara, M. Sakamoto, T. Takanashi, H. Kuramochi, X. M. Zhang, H. Bito, T. Tahara, and Y. Sudo: "Comparative studies of the fluorescence properties of microbial rhodopsins: Spontaneous emission versus photointermediate fluorescence", *J. Phys. Chem. B.* 124, 7361-7367, (2020).
4. R. Kotani, L. Liu, P. Kumar, H. Kuramochi, T. Tahara, P. Liu, A. Osuka, P. B. Karadakov, and S. Saito: "Controlling the S1 energy profile by tuning excited-state aromaticity", *J. Am. Chem. Soc.* 142, 14985-14992, (2020).
5. H. Kuramochi, G. Aoyama, H. Okajima, A. Sakamoto, S. Kanegawa, O. Sato, S. Takeuchi, and T. Tahara: "Femtosecond polarization switching in the crystal of a [CrCo] dinuclear complex", *Angew. Chem. Int. Ed.* 59, 15865-15869, (2020).
6. R. Kimura, H. Kuramochi, L. Pengpeng, T. Yamakado, A. Osuka, T. Tahara, and S. Saito: "Flapping peryleneimide as a fluorogenic dye with high photostability and strong visible-light absorption", *Angew. Chem. Int. Ed.* 59, 16430-16435, (2020).
7. K. Inoue, M. Ahmed, S. Nihonyanagi, and T. Tahara: "Reorientation-induced relaxation of free OH at the air/water interface revealed by ultrafast heterodyne-detected nonlinear spectroscopy", *Nat. Commun.* 11, 5344/1-7, (2020).
8. M. Iwamura, A. Fukui, K. Nozaki, H. Kuramochi, S. Takeuchi, and T. Tahara: "Coherent vibration and femtosecond dynamics of the platinum complex oligomers upon intermolecular bond formation in the excited state", *Angew. Chem. Int. Ed.* 59, 23154-23161, (2020).

9. R. Kusaka, S. Nihonyanagi, and T. Tahara, "The photochemical reaction of phenol becomes ultrafast at the air–water interface", *Nat. Chem.* 13, 306-311, (2021).
10. W. Kim, S. Tahara, H. Kuramochi, S. Takeuchi, T. Kim, T. Tahara, and D. Kim: "Mode-specific vibrational analysis of exciton delocalization and structural dynamics in conjugated oligomers", *Angew. Chem. Int. Ed.* accepted., (2021).

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

1. 石井邦彦 , 田原太平 , " 生体分子の速い熱揺らぎを捉える—マイクロ秒 1 分子 蛍光計測への挑戦 ", *化学* , 75, 74-75, (2020).

(3) 招待講演 / Invited Talks

1. T. Tahara, "Time-domain Raman spectroscopy: I. Concept & steady-state time-domain Raman", International school on nonlinear vibrational spectro-microscopy, Online, July, (2020).
2. T. Tahara, "Time-domain Raman spectroscopy: II. Femtosecond time-resolved time-domain Raman", International school on nonlinear vibrational spectro-microscopy, Online, July, (2020).
3. 田原 太平 , " フェムト秒時間分解吸収分光によって得られた微生物ロドプシンの多様な励起状態ダイナミクスに対する統一的視点 A Unified View for Diverse ultrafast excited-state dynamics of microbial rhodopsins acquired by femtosecond time-resolved absorption spectroscopy", 第 43 回日本分子生物学会年会 , オンライン , 12 月 4 日 , (2020).
4. T. Tahara, "Tracking ultrafast chemical reactions at the aqueous interface with femtosecond time-resolved HD-VSFG spectroscopy", 7th Asian Spectroscopy Conference, Online, December, (2020).
5. T. Tahara, "Three researches going on at MLS: What we wish to understand about Nature?", A National Workshop on Fluorescence and Raman Spectroscopy, Online, December, (2020).
6. P. Kumar, "Time-resolved time-domain Raman spectroscopy for studying the excited-state structural dynamics", A National Workshop on Fluorescence and Raman Spectroscopy, Online, December, (2020).

7. M. Ahmed, S. Nihonyanagi, and T. Tahara, “Probing ultrafast dynamics of water at aqueous interfaces with femtosecond two- dimensional heterodyne-detected VSFG spectroscopy”, National Laser Symposium NLS-29, Online, February, (2021).

(4) 特許出願 / Patent Applications

1. 松崎維信 , 田原太平 , 石井邦彦 , “ 分析方法、発光分析装置、拡散光トモグラフィ装置、撮像装置、反射率測定装置、分析装置、及びプログラム ”, PCT/JP2021/006681, 2021 年 2 月 22 日

(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. Angewandte Chemie International Edition, Vol. 59, No. 24, 2021 年 6 月 8 日 発行 Inside Back Cover
2. Angewandte Chemie International Edition, Vol. 59, No. 51, 2020 年 12 月 14 日 発行 Inside Back Cover
3. Nature Chemistry, Vol. 13, No. 4, 2021 年 4 月 15 日発行 Cover