チーム名： 超高速分子計測研究チーム

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

1. H. Kuramochi, S. Takeuchi, K. Yonezawa, H. Kamikubo, M. Kataoka, and T. Tahara, “Probing the early stages of photoreception in photoactive yellow protein with ultrafast time-domain Raman spectroscopy,” Nat. Chem. 9, 660-666 (2017).
2. T. Otosu, K. Ishii, H. Oikawa, M. Arai, S. Takahashi, and T. Tahara, “Highly heterogeneous nature of the native and unfolded states of the B domain of protein A revealed by two-dimensional fluorescence lifetime correlation spectroscopy,” J. Phys. Chem. B, 121, 5463-5473, (2017).
3. W. Pao, K. Hanaoka, T. Fujisawa, S. Takeuchi, T. Komatsu, T. Ueno, T. Terai, and T. Tahara, T. Nagano, and Y. Urano, “Development of an azo-based photosensitizer activated under mild hypoxia for photodynamic therapy,” J. Am. Chem. Soc., 139, 13713–13719 (2017).
4. K. Inoue, P. C. Singh, S. Nihonyanagi, S. Yamaguchi, and T. Tahara, “Cooperative hydrogen-bond dynamics at a zwitterionic lipid/water interface revealed by 2D HD-VSFG spectroscopy,” J. Phys. Chem. Lett., 8, 5160–5165 (2017).
5. J. B. Swadling, K. Ishii, T. Tahara, and A. Kitao, “Origins of biological function in DNA and RNA hairpin loop motifs from replica exchange molecular dynamics simulation,” Phys. Chem. Chem. Phys., 20, 2990-3001 (2018).
6. S. Tahara, S. Takeuchi, R. A. Yoshizumi, K. Inoue, H. Ohtani, H. Kandori, and T. Tahara, “Origin of the reactive and non-reactive excited states in the primary reaction of rhodopsins: pH dependence of femtosecond absorption of light-driven sodium ion pump rhodopsin KR2,” J. Phys. Chem. B, 122, 4784-4792 (2018).
7. H. Kuramochi, S. Takeuchi, and T. Tahara, “Ultrafast photodissociation dynamics of diphenylcyclopropenone studied by time-resolved impulsive stimulated Raman spectroscopy,” Chem. Phys. in press.

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

1. S. Nihonyanagi, S. Yamaguchi, and T. Tahara, “Ultrafast dynamics at water interfaces studied by vibrational sum-frequency generation spectroscopy,” Chem. Rev., 117, 10665-10693 (2017).
2. 倉持光, “時間領域ラマン分光法の極限化とその光応答性タンパク質への応用,” 分光研究, 66, 155-163 (2017).
3. 石井邦彦,田原太平, “二次元分光法:タンパク質のダイナミクスを可視化する二次元蛍光寿命相関分光法を中心として,” 日本物理学会誌, 72, 854-861 (2017).

（3） 招待講演 ／ Invited Talks

1. 倉持光, “時間領域ラマン分光法の極限化とその光応答性タンパク質への応用,” 平成 29 年度 日本分光学会年次講演会, 東京, 5 月 23 日～25 日, (2017).
2. 井上賢一, “ヘテロダイン検出振動和周波発生分光法を用いた界面水の超高速ダイナミクス,” 分子研研究会「水の局所構造・物性解析の最先端」, 愛知, 6 月 12 日 (2017).
3. 田原太平, “新しい分光計測の開発と応用による複雑分子系ダイナミクスの研究,” 東京工業大学理学院化学系 講演会, 東京, 6 月 15 日 (2017).
4. 田原太平, “二次元蛍光寿命相関分光によるタンパク質のマイクロ秒ダイナミクスの研究,” シンポジウム:蛋白質の柔らかさと機能 Flexibility and function of proteins, 第 17 回日本蛋白質科学会年会, 宮城, 6 月 20 日～6 月 22 日 (2017).
5. T. Tahara, “Femtosecond nuclear dynamics of photo-induced structural changes of metal complexes,” 22nd International Symposium on Photochemistry and Photophysics of Coordination Compounds (ISPPCC 2017), Oxford, UK, July 9-14, (2017).
6. S. Takeuchi, H. Kuramochi, M. Iwamura, K. Nozaki, T. Tahara, “Ultrafast time-domain Raman study of bond strengthening in oligomers of Au(I) complex,” International Conference on Time Resolved Vibrational Spectroscopy (TRVS2017), Cambridge, UK, July 16-21, (2017).
7. T. Tahara, “Ultrafast dynamics at water interfaces studied by time-resolved HD-VSFG,” The International Workshop on Nonlinear Optics at Interfaces, Dalian, China, July 24-28, (2017).
8. T. Tahara, “Tracking structural dynamics of complex molecules by femtosecond time-domain Raman spectroscopy,” Telluride Science Research Center (TSRC) Workshop "Vibrational Dynamics", Telluride, USA, July 31-August 4, (2017).
9. K. Ishii, T. Tahara, “Development and application of two-dimensional fluorescence lifetime correlation spectroscopy,” The 6th Asian Spectroscopy Conference (ASC2017), Hsinchu, Taiwan, Sep. 3-6, (2017).
10. T. Tahara, “Ultrafast dynamics at water interfaces revealed by time-resolved heterodyne-detected vibrational sum-frequency generation,” The 6th Asian Spectroscopy Conference, Hsinchu, Taiwan, Sep. 3-6, (2017).
11. H. Kuramochi, S. Takeuchi, M. Iwamura, K. Nozaki, T. Tahara, “Capturing structural snapshots of tight Au-Au bond formation in [$Au(CN)^{2-}$] oligomers by ultrafast time-domain Raman spectroscopy,” The 6th Asian Spectroscopy Conference, Hsinchu, Taiwan, Sep. 3-6, (2017).
12. 二本柳聡史, “新しい非線形分光法による固液界面の分子科学,” 富山大学工学部セミナー, 富山, 11 月 17 日 (2017).
13. T. Tahara, “Primary process of photo-responsive proteins studied by femtosecond time-domain Raman spectroscopy,” DAE - BRNS Trombay Symposium on Radiation & Photochemistry, Mumbai, India, Jan. 3-7, (2018).

14. T. Tahara, “Femtosecond dynamics of photo-induced structural changes of metal complexes,” Department Seminar, Indian Institute of Science Education and Research (IISER) Bhopal, India, Jan. 8, (2018).
15. H. Kuramochi, S. Takeuchi, M. Iwamura, K. Nozaki, T. Tahara, “Direct observation of ultrafast structural dynamics in [$Au(CN)^{2-}$] oligomers upon photo-induced tight Au-Au bond formation,” The 10th Asian Conference on Ultrafast Phenomena (ACUP 2018), Hong Kong, Jan. 7-10, (2018).
16. T. Tahara, “Novel single-molecule spectroscopy: microsecond structural dynamics of protein, DNA and RNA revealed by two -dimensional fluorescence lifetime correlation spectroscopy (2D-FLCS) ,” Department Seminar, Indian Institute of Technology (IIT) at Bombay, Mumbai, India, Jan. 9, (2018).
17. 倉持光, “時間領域ラマン分光法で観る分子の超高速構造ダイナミクス,” 理研 研究員会議・分野横断ワークショップ, 浜松, 1 月 23 日～24 日(2018).
18. 倉持光, “超高速時間領域ラマン分光法で観る光応答性タンパク質のフェムト秒構造ダイナミクス,” レーザー学会学術講演会第 38 回年次大会, 京都, 1 月 24 日～26 日 (2018).
19. 石井邦彦, “生体高分子のマイクロ秒ダイナミクスの一分子計測,” 第 14 回エクストリームフォトニクス研究会, 和光市, 2 月 6 日, (2018).
20. T. Tahara, “Femtosecond time-domain Raman spectroscopy,” Symposium on “90 Years of Raman Effect: Current Status and Future Direction”, Indian Institute of Science, Bangalore, India, Feb 27-March 2, (2018).
21. 倉持光, “極短パルス光を用いた光応答性タンパク質の実時間構造ダイナミクス追跡,” 2017 年度第 2 回水和ナノ構造研究会, 宮城, 3 月 6 日～7 日, (2018).
22. T. Tahara, “Ultrafast primary process of photo-responsive proteins revealed by femtosecond Raman spectroscopy,” 255th ACS National Meeting & Exposition, Symposium: Ultrafast Spectroscopy Meets Chemistry, Materials and Biology (ANYL), New Orleans, USA, Mar 18 – 22, (2018).
23. K. Ishii, “Microsecond biomolecular dynamics observed at the single molecule level using two-dimensional fluorescence lifetime correlation spectroscopy,” 日本化学会第 98 回春季年会アジア国際シンポジウム, 船橋, 3 月 20 日~23 日, (2018).

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

1. RAP セミナー, “Raman microscopy beyond the limit -限界を超えるラマン顕微鏡,” 和光, 4 月 14 日, (2017).
2. セミナー, “Using molecular vibrations to observe and control electronic dynamics in organic materials and devices,” 和光, 4 月 20 日, (2017).
3. セミナー, “Adsorption characteristic of halide anion in Langmuir monolayer / water interfaces,” 和光, 4 月 24 日, (2017).

4. セミナー, “Bio-molecules on solid supported model cell membranes investigated by SFG-VS,” 和光, 12 月 4 日, (2017).
5. セミナー, “Photo-physical properties of new molecular materials for solar cells,” 和光, 12 月 20 日, (2017).
6. セミナー, “Energy Transfer Dynamics of Natural and Artificial Photosynthetic Reaction Investigated by Femtosecond Transient Absorption Spectroscopy,” 和光, 3 月 29 日, (2018).