

履歴書・業績目録

2024年3月27日現在

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2014-2024年 理化学研究所 客員主管研究員
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所属学会 分子科学会, 日本分光学会, 米国化学会

外部資金 (代表のみ)

1996年 奨励研究(A), 研究課題番号 08740447, 研究経費 1,200 千円
「フェムト秒円2色分光計の製作とその軸性不斉分子の光ラセミ化測定への応用」
2003~2005年 若手研究(B), 研究課題番号 15750023, 研究経費 3,800 千円
「DNAの二次構造転移の観測」
2010-2012年 基盤研究(B), 研究課題番号 22350014, 研究経費 19,890 千円
「二次非線形分光によるタンパク質の高次構造解析」
2013-2015年 基盤研究(B), 研究課題番号 25288014, 研究経費 18,850 千円
「埋もれた界面のヘテロダイン検出と周波発生の開発と応用」
2014年 倉田記念日立科学技術財団倉田奨励金, 研究経費 1,300 千円
「超広帯域位相敏感表面第二高調波発生分光光度計の開発」
2015年 光科学技術研究振興財団研究助成金, 研究経費 900 千円
「局所発振制御と周波発生分光法の開発と応用」
2015-2016年 挑戦的萌芽研究, 研究課題番号 15K13616, 研究経費 3,900 千円
「シングルチャンネル・ヘテロダイン検出と周波発生分光法の開発と応用」
2015-2017年 基盤研究(B), 研究課題番号 15KT0056, 研究経費 18,070 千円
「新規界面選択的偶数次非線形レーザー分光法による界面分子の化学反応の遷移状態の解明」
2018-2019年 山田科学振興財団研究援助, 研究経費 30,000 千円

- 「先端的レーザー分光による氷表面の分子科学」
2019年 新分野創成センター先端光科学研究分野, 課題番号 01211908,
研究経費 3,000 千円
- 「先端的レーザー分光によるアモルファス氷表面の分子科学」
2018 - 2021年 基盤研究(B), 研究課題番号 18H01934, 研究経費 17,160 千円
「単結晶氷 Ih の界面の構造とダイナミクスの研究」
- 2022 - 2026年 基盤研究(B), 研究課題番号 22H02027, 研究経費 17,290 千円
「水/水, 水/氷, 氷/氷界面の構造とダイナミクス」

英文論文・総説

- [1] Koichi Iwata, Shoichi Yamaguchi, and Hiro-o Hamaguchi, "Construction of a transform-limited picosecond time-resolved Raman spectrometer", *Rev. Sci. Instrum.* **64** (1993) 2140-2146.
- [2] Shoichi Yamaguchi and Hiro-o Hamaguchi, "Ultrafast Vibrational Relaxation in Photogenerated S₁ α-Terthiophene in Solution by Femtosecond Time-resolved Absorption/Emission and Picosecond Time-resolved Raman Spectroscopy", *Chem. Phys. Lett.* **227** (1994) 255-260.
- [3] Shoichi Yamaguchi and Hiro-o Hamaguchi, "Convenient method of measuring the chirp structure of femtosecond white-light continuum pulses", *Appl. Spectrosc.* **49** (1995) 1513-1515.
- [4] Shoichi Yamaguchi and Hiro-o Hamaguchi, "Femtosecond time-resolved absorption spectroscopy of all-*trans* retinal in hexane", *J. Mol. Struct.* **379** (1996) 87-92.
- [5] J. W. Blatchford, S. W. Jessen, L. B. Lin, J. J. Lih, T. L. Gustafson, A. J. Epstein, T. M. Swager, A. C. MacDiarmid, S. Yamaguchi, and H. Hamaguchi, "Exciton Dynamics in Poly(*p*-pyridyl vinylene)", *Phys. Rev. Lett.* **76** (1996) 1513-1516.
- [6] Shoichi Yamaguchi and Hiro-o Hamaguchi, "Femtosecond Visible Absorption Study of Excited-State Dynamics of 9-*cis* Retinal", *Chem. Phys. Lett.* **287** (1998) 694-700.
- [7] Shoichi Yamaguchi and Hiro-o Hamaguchi, "Femtosecond UV-VIS Absorption Study of All-*trans* → 13-*cis*-9-*cis* Photoisomerization of Retinal", *J. Chem. Phys.* **109** (1998) 1397-1408.

- [8] K. Mohanalingam, S. Yamaguchi, and H. Hamaguchi, "Two distinct solvated structures of para-nitroaniline in acetonitrile and their dissociation and reassociation dynamics", *Laser Chem.* **19** (1999) 329-333.
- [9] Shoichi Yamaguchi and Yutaka Sasaki, "Primary Process of Photocarrier Generation in Y-form Titanyl Phthalocyanine Studied by Electric-Field-Modulated Picosecond Time-Resolved Fluorescence Spectroscopy", *J. Phys. Chem. B* **103** (1999) 6835-6838.
- [10] Shoichi Yamaguchi and Hiro-o Hamaguchi, "Ultrafast Electronic Relaxation and Hydrogen-Bond-Formation/Dissociation Dynamics of Photoexcited All-*trans* Retinal in Protic Solvents", *J. Phys. Chem. A* **104** (2000) 4272-4279.
- [11] Shoichi Yamaguchi and Yutaka Sasaki, "Primary Carrier-Generation Process in Y-form and Phase I Titanyl Phthalocyanines", *Chem. Phys. Lett.* **323** (2000) 35-42.
- [12] Shoichi Yamaguchi and Yutaka Sasaki, "Construction of Electric-Field-Modulated Picosecond Time-Resolved Fluorescence Spectrometer", *Jpn. J. Appl. Phys. Part 1* **39** (2000) 6107-6108.
- [13] Shoichi Yamaguchi and Yutaka Sasaki, "Effect of Water on Primary Photocarrier-Generation Process in Y-form Titanyl Phthalocyanine", *J. Phys. Chem. B* **104** (2000) 9225-9229.
- [14] Shoichi Yamaguchi and Yutaka Sasaki, "Water Effect on Primary Photocarrier-Generation Process in Y-form Titanyl Phthalocyanine", *Proc. SPIE* **4110** (2000) 337-344.
- [15] Shoichi Yamaguchi and Yutaka Sasaki, "Spectroscopic Determination of Very Low Quantum Yield of Singlet Oxygen Formation Photosensitized by Industrial Dyes", *J. Photochem. Photobiol. A: Chem.* **142** (2001) 47-50.
- [16] Shoichi Yamaguchi and Tahei Tahara, "Two-Photon Absorption Spectrum of All-*trans* Retinal", *Chem. Phys. Lett.* **376** (2003) 237-243.
- [17] Shoichi Yamaguchi and Tahei Tahara, "Observation of an Optically Forbidden State of C₆₀ by Nondegenerate Two-Photon Absorption Spectroscopy", *Chem. Phys. Lett.* **390** (2004) 136-139.
- [18] Shoichi Yamaguchi and Tahei Tahara, "Precise Electronic $\chi^{(2)}$ Spectra of Molecules Adsorbed at an Interface Measured by Multiplex Sum Frequency Generation", *J. Phys. Chem. B* **108** (2004) 19079-19082.

- [19] Haruko Hosoi, Shoichi Yamaguchi, and Tahei Tahara, "Host to Guest Energy Transfer in a Self-Assembled Supramolecular Nanocage Observed by Picosecond Fluorescence Quenching", *Chem. Lett.* **34** (2005) 618-619.
- [20] Misao Mizuno, Shoichi Yamaguchi, and Tahei Tahara, "Relaxation Dynamics of the Hydrated Electron: Femtosecond Time-Resolved Resonance Raman and Luminescence Study", *J. Phys. Chem. A* **109** (2005) 5257-5265.
- [21] Shoichi Yamaguchi and Tahei Tahara, "Interface-Specific $\chi^{(4)}$ Coherent Raman Spectroscopy in the Frequency Domain", *J. Phys. Chem. B* **109** (2005) 24211-24214.
- [22] Kentaro Sekiguchi, Shoichi Yamaguchi, and Tahei Tahara, "Formation and Dissociation of Rhodamine 800 Dimers in Water: Steady-State and Ultrafast Spectroscopic Study", *J. Phys. Chem. A* **110** (2006) 2601-2606.
- [23] Shoichi Yamaguchi and Tahei Tahara, "Determining Electronic Spectra at Interfaces by Electronic Sum Frequency Generation: One- and Two-Photon Double Resonant Oxazine 750 at the Air/Water Interface", *J. Chem. Phys.* **125** (2006) 194711.
- [24] Shoichi Yamaguchi and Tahei Tahara, " $\chi^{(4)}$ Raman Spectroscopy for Buried Water Interfaces", *Angew. Chem. Int. Ed.* **46** (2007) 7609-7612.
- [25] Shoichi Yamaguchi and Tahei Tahara, "Novel Interface-Selective Even-Order Nonlinear Spectroscopy", *Laser Photonics Rev.* **2** (2008) 74-82.
- [26] Haruko Hosoi, Shoichi Yamaguchi, Hideaki Mizuno, Atsushi Miyawaki, and Tahei Tahara, "Hidden Electronic Excited State of Enhanced Green Fluorescent Protein", *J. Phys. Chem. B* **112** (2008) 2761-2763.
- [27] Kentaro Sekiguchi, Shoichi Yamaguchi, and Tahei Tahara, "Femtosecond time-resolved electronic sum-frequency generation spectroscopy: A new method to investigate ultrafast dynamics at liquid interfaces", *J. Chem. Phys.* **128** (2008) 114715.
- [28] Shoichi Yamaguchi and Tahei Tahara, "Coherent Acoustic Phonons in a Thin Gold Film Probed by Femtosecond Surface Plasmon Resonance", *J. Raman Spectrosc.* **39** (2008) 1703-1706.
- [29] Shoichi Yamaguchi and Tahei Tahara, "Heterodyne-Detected Electronic Sum Frequency Generation: 'Up' versus 'Down' Alignment of Interfacial Molecules", *J. Chem. Phys.* **129** (2008) 101102.

- [30] Pratik Sen, [Shoichi Yamaguchi](#), and Tahei Tahara, "New Insight into the Surface Denaturation of Proteins: Electronic Sum Frequency Generation Study of Cytochrome c at Water Interfaces", *J. Phys. Chem. B* **112** (2008) 13473-13475.
- [31] Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), and Tahei Tahara, "Direct evidence for orientational flip-flop of water molecules at charged interfaces: A heterodyne-detected vibrational sum frequency generation study", *J. Chem. Phys.* **130** (2009) 204704.
- [32] Sobhan Sen, [Shoichi Yamaguchi](#), and Tahei Tahara, "Different Molecules Experience Different Polarities at the Air/Water Interface", *Angew. Chem. Int. Ed.* **48** (2009) 6439-6442.
- [33] Pratik Sen, [Shoichi Yamaguchi](#), and Tahei Tahara, "Ultrafast dynamics of malachite green at the air/water interface studied by femtosecond time-resolved electronic sum frequency generation (TR-ESFG): an indicator for local viscosity", *Faraday Discuss.* **145** (2010) 411-428.
- [34] Hidekazu Watanabe, [Shoichi Yamaguchi](#), Sobhan Sen, Akihiro Morita, and Tahei Tahara, "'Half hydration' at the air/water interface revealed by heterodyne-detected electronic sum frequency generation spectroscopy, polarization second harmonic generation, and molecular dynamics simulation", *J. Chem. Phys.* **132** (2010) 144701.
- [35] Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), and Tahei Tahara, "Water Hydrogen Bond Structure near Highly Charged Interfaces Is Not Like Ice", *J. Am. Chem. Soc.* **132** (2010) 6867-6869.
- [36] Jahur A. Mondal, Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), and Tahei Tahara, "Structure and orientation of water at charged lipid monolayer/water interfaces probed by heterodyne-detected vibrational sum frequency generation spectroscopy", *J. Am. Chem. Soc.* **132** (2010) 10656-10657.
- [37] [Shoichi Yamaguchi](#), Haruko Hosoi, Megumi Yamashita, Pratik Sen, and Tahei Tahara, "Physisorption Gives Narrower Orientational Distribution than Chemisorption on a Glass Surface: A Polarization-Sensitive Linear and Nonlinear Optical Study", *J. Phys. Chem. Lett.* **1** (2010) 2662-2665.
- [38] Sudip Kumar Mondal, [Shoichi Yamaguchi](#), and Tahei Tahara, "Molecules at the Air/Water Interface Experience a More Inhomogeneous Solvation Environment than in Bulk Solvents: A Quantitative Band Shape Analysis of Interfacial Electronic Spectra Obtained by HD-ESFG", *J. Phys. Chem. C* **115** (2011) 3083-3089.

- [39] [Shoichi Yamaguchi](#), Kankan Bhattacharyya, and Tahei Tahara, "Acid-Base Equilibrium at an Aqueous Interface: pH Spectrometry by Heterodyne-Detected Electronic Sum Frequency Generation", *J. Phys. Chem. C* **115** (2011) 4168-4173.
- [40] [Shoichi Yamaguchi](#), Kazuya Shiratori, Akihiro Morita, and Tahei Tahara, "Electric quadrupole contribution to the nonresonant background of sum frequency generation at air/liquid interfaces", *J. Chem. Phys.* **134** (2011) 184705.
- [41] Satoshi Nihonyanagi, Tatsuya Ishiyama, Touk-kwan Lee, [Shoichi Yamaguchi](#), Mischa Bonn, Akihiro Morita, and Tahei Tahara, "Unified Molecular View of Air/Water Interface Based on Experimental and Theoretical $\chi^{(2)}$ Spectra of an Isotopically Diluted Water Surface", *J. Am. Chem. Soc.* **133** (2011) 16875-16880.
- [42] [Shoichi Yamaguchi](#), Hidekazu Watanabe, Sudip Kumar Mondal, Achintya Kundu, and Tahei Tahara, "'Up' versus 'down' alignment and hydration structures of solutes at the air/water interface revealed by heterodyne-detected electronic sum frequency generation with classical molecular dynamics simulation", *J. Chem. Phys.* **135** (2011) 194705.
- [43] Jahur A. Mondal, Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), and Tahei Tahara, "Three Distinct Water Structures at a Zwitterionic Lipid/Water Interface Revealed by Heterodyne-Detected Vibrational Sum Frequency Generation", *J. Am. Chem. Soc.* **134** (2012) 7842-7850.
- [44] Satoshi Nihonyanagi, Prashant Chandra Singh, [Shoichi Yamaguchi](#), and Tahei Tahara, "Ultrafast Vibrational Dynamics of a Charged Aqueous Interface by Femtosecond Time-Resolved Heterodyne-Detected Vibrational Sum Frequency Generation", *Bull. Chem. Soc. Jpn.* **85** (2012) 758-760.
- [45] Prashant Chandra Singh, Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), and Tahei Tahara, "Ultrafast vibrational dynamics of water at a charged interface revealed by two-dimensional heterodyne-detected vibrational sum frequency generation", *J. Chem. Phys.* **137** (2012) 094706.
- [46] [Shoichi Yamaguchi](#), Achintya Kundu, Pratik Sen, and Tahei Tahara, "Quantitative estimate of the water surface pH using heterodyne-detected electronic sum frequency generation", *J. Chem. Phys.* **137** (2012) 151101.
- [47] Satoshi Nihonyanagi, Jahur A. Mondal, [Shoichi Yamaguchi](#), and Tahei Tahara, "Structure and Dynamics of Interfacial Water Studied by Heterodyne-Detected Vibrational Sum-Frequency Generation", *Ann. Rev. Phys. Chem.* **64** (2013) 579-603.

- [48] Kazuya Shiratori, [Shoichi Yamaguchi](#), Tahei Tahara, and Akihiro Morita, "Computational analysis of the quadrupole contribution in the second-harmonic generation spectroscopy for the water/vapor interface", *J. Chem. Phys.* **138** (2013) 064704.
- [49] Achintya Kundu, Hidekazu Watanabe, [Shoichi Yamaguchi](#), and Tahei Tahara, "Agreement between experimentally and theoretically estimated orientational distributions of solutes at the air/water interface", *J. Phys. Chem. C*. **117** (2013) 8887-8891.
- [50] Korenobu Matsuzaki, Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), Takashi Nagata, and Tahei Tahara, "Vibrational sum frequency generation by the quadrupolar mechanism at the nonpolar benzene/air interface", *J. Phys. Chem. Lett.* **4** (2013) 1654-1658.
- [51] Prashant Chandra Singh, Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), and Tahei Tahara, "Ultrafast vibrational dynamics of hydrogen bond network terminated at the air/water interface: A two-dimensional heterodyne-detected vibrational sum frequency generation study", *J. Chem. Phys.* **139** (2013) 161101.
- [52] Achintya Kundu, [Shoichi Yamaguchi](#), and Tahei Tahara, "Evaluation of pH at Charged Lipid/Water Interfaces by Heterodyne-Detected Electronic Sum Frequency Generation", *J. Phys. Chem. Lett.* **5** (2014) 762-766.
- [53] Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), and Tahei Tahara, "Role of Hydrogen Bonding on the Mechanisms of Hofmeister Series", *J. Am. Chem. Soc.* **136** (2014) 6155-6158.
- [54] Prashant Chandra Singh, Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), and Tahei Tahara, "Interfacial water in the vicinity of a positively charged interface studied by steady-state and time-resolved heterodyne-detected vibrational sum frequency generation", *J. Chem. Phys.* **141** (2014) 18C527.
- [55] Ken-ichi Inoue, Satoshi Nihonyanagi, Prashant Chandra Singh, [Shoichi Yamaguchi](#), and Tahei Tahara, "2D Heterodyne-Detected Sum Frequency Generation Study on Ultrafast Vibrational Dynamics of H₂O and HOD Water at Charged Interfaces", *J. Chem. Phys.* **142** (2015) 212431.
- [56] [Shoichi Yamaguchi](#) and Tahei Tahara, "Development of Electronic Sum Frequency Generation Spectroscopies and their Application to Liquid Interfaces", *J. Phys. Chem. C* **119** (2015) 14815-14828.
- [57] [Shoichi Yamaguchi](#), "Development of single-channel heterodyne-detected sum frequency generation spectroscopy and its application to the water/vapor interface", *J. Chem. Phys.* **143** (2015) 034202.

- [58] Sudip Kumar Mondal, Ken-ichi Inoue, [Shoichi Yamaguchi](#), and Tahei Tahara, "Anomalous Effective Polarity of an Air/Liquid-Mixture Interface: A Heterodyne-Detected Electronic and Vibrational Sum Frequency Generation Study", *Phys. Chem. Chem. Phys.* **17** (2015) 23720-23723.
- [59] Satoshi Nihonyanagi, Ryoji Kusaka, Ken-ichi Inoue, Aniruddha Adhikari, [Shoichi Yamaguchi](#), and Tahei Tahara, "Accurate determination of complex $\chi^{(2)}$ spectrum of the air/water interface", *J. Chem. Phys.* **143** (2015) 124707.
- [60] Ken-ichi Inoue, Tatsuya Ishiyama, Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), Akihiro Morita, and Tahei Tahara, "Efficient Spectral Diffusion at the Air/Water Interface Revealed by Femtosecond Time-Resolved Heterodyne-Detected Vibrational Sum Frequency Generation Spectroscopy", *J. Phys. Chem. Lett.* **7** (2016) 1811-1815.
- [61] Anton Myalitsin, Shu-hei Urashima, Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), and Tahei Tahara, "Water Structure at the Buried Silica/Aqueous Interface Studied by Heterodyne-Detected Vibrational Sum-Frequency Generation", *J. Phys. Chem. C* **120** (2016) 9357-9363.
- [62] Korenobu Matsuzaki, Ryoji Kusaka, Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), Takashi Nagata, and Tahei Tahara, "Partially Hydrated Electrons at the Air/Water Interface Observed by UV-Excited Time-Resolved Heterodyne-Detected Vibrational Sum Frequency Generation Spectroscopy", *J. Am. Chem. Soc.* **138** (2016) 7551-7557.
- [63] Achintya Kundu, Tatsuya Ishiyama, Mohammed Ahmed, Shogo Tanaka, Ken-ichi Inoue, Satoshi Nihonyanagi, Hiromi Sawai, [Shoichi Yamaguchi](#), Akihiro Morita, and Tahei Tahara, "Bend Vibration of Surface Water Investigated by Heterodyne-Detected Sum Frequency Generation and Theoretical Study: Dominant Role of Quadrupole", *J. Phys. Chem. Lett.* **7** (2016) 2597-2601
- [64] Prashant Chandra Singh, Ken-ichi Inoue, Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), and Tahei Tahara, "Femtosecond Hydrogen-Bond Dynamics of Bulk-like and Bound Water at Positively and Negatively Charged Lipid Interfaces Revealed by 2D HD-VSFG Spectroscopy", *Angew. Chem. Int. Ed.* **55** (2016) 10621-10625.
- [65] [Shoichi Yamaguchi](#), "Comment on 'Phase reference in phase-sensitive sum-frequency vibrational spectroscopy' [J. Chem. Phys. 144, 244711 (2016)]", *J. Chem. Phys.* **145** (2016) 167101.
- [66] Yuki Nojima, Yudai Suzuki, and [Shoichi Yamaguchi](#), "Weakly Hydrogen-Bonded Water Inside Charged Lipid Monolayer Observed with Heterodyne-Detected Vibrational Sum Frequency Generation Spectroscopy", *J. Phys. Chem. C* **121** (2017) 2173-2180.

- [67] Yudai Suzuki, Yuki Nojima, and Shoichi Yamaguchi, "Vibrational Coupling at the Topmost Surface of Water Revealed by Heterodyne-Detected Sum Frequency Generation Spectroscopy", *J. Phys. Chem. Lett.* **8** (2017) 1396-1401.
- [68] Satoshi Nihonyanagi, Shoichi Yamaguchi, and Tahei Tahara, "Ultrafast dynamics at water interfaces studied by vibrational sum-frequency generation spectroscopy", *Chem. Rev.* **117** (2017) 10665-10693.
- [69] Takuhiro Otsu and Shoichi Yamaguchi, "Development of standing evanescent-wave fluorescence correlation spectroscopy and its application to the lateral diffusion of lipids in a supported lipid bilayer", *J. Chem. Phys.* **147** (2017) 041101.
- [70] Yuki Nojima, Yudai Suzuki, Misato Takahashi, and Shoichi Yamaguchi, "Proton Order toward the Surface of Ice I_h Revealed by Heterodyne-Detected Sum Frequency Generation Spectroscopy", *J. Phys. Chem. Lett.* **8** (2017) 5031-5034.
- [71] Ken-ichi Inoue, Prashant Chandra Singh, Satoshi Nihonyanagi, Shoichi Yamaguchi, and Tahei Tahara, "Cooperative Hydrogen-Bond Dynamics at a Zwitterionic Lipid/Water Interface Revealed by 2D HD-VSFG Spectroscopy", *J. Phys. Chem. Lett.* **8** (2017) 5160-5165.
- [72] Takuhiro Otsu, Kaito Kobayashi, and Shoichi Yamaguchi, "Local pH at the surface of hen egg white lysozyme", *Chem. Phys. Lett.* **693** (2018) 165-169.
- [73] Andrew J. Traverso, Brett Hokr, Zhenhuan Yi, Luqi Yuan, Shoichi Yamaguchi, Marlan O. Scully, and Vladislav V. Yakovlev, "Two-photon infrared resonance can enhance coherent Raman scattering", *Phys. Rev. Lett.* **120** (2018) 063602.
- [74] Takuhiro Otsu and Shoichi Yamaguchi, "Total Internal Reflection Two-Dimensional Fluorescence Lifetime Correlation Spectroscopy", *J. Phys. Chem. B* **122** (2018) 5758-5764.
- [75] Takuhiro Otsu and Shoichi Yamaguchi, "Quantifying the Diffusion of Lipids in the Proximal/Distal Leaflets of a Supported Lipid Bilayer by Two-Dimensional Fluorescence Lifetime Correlation Spectroscopy", *J. Phys. Chem. B* **122** (2018) 10315-10319.
- [76] Takuhiro Otsu and Shoichi Yamaguchi, "Two-Dimensional Fluorescence Lifetime Correlation Spectroscopy: Concepts and Applications", *Molecules* **23** (2018) 2972.

- [77] Shoichi Yamaguchi, Yudai Suzuki, Yuki Nojima, and Takuhiro Otsu, "Perspective on sum frequency generation spectroscopy of ice surfaces and interfaces", *Chem. Phys.* **522** (2019) 199-210.
- [78] Takuhiro Otsu and Shoichi Yamaguchi, "Reduction of glass-surface charge density slows the lipid diffusion in the proximal leaflet of a supported lipid bilayer", *J. Chem. Phys.* **151** (2019) 025102.
- [79] Korenobu Matsuzaki, Satoshi Nihonyanagi, Shoichi Yamaguchi, Takashi Nagata, and Tahei Tahara, "Quadrupolar mechanism for vibrational sum frequency generation at air/liquid interfaces: Theory and experiment", *J. Chem. Phys.* **151** (2019) 064701.
- [80] Takuhiro Otsu and Shoichi Yamaguchi, "Electrostatic attraction between lipid headgroups and a glass surface enhances the lipid diffusion in the proximal leaflet of a supported lipid bilayer", *Phys. Chem. Chem. Phys.* **22** (2020) 1242-1249.
- [81] Yuki Nojima, Yuki Shioya, Hajime Torii, and Shoichi Yamaguchi, "Hydrogen order at the surface of ice I_h revealed by vibrational spectroscopy", *Chem. Commun.* **56** (2020) 4563-4566.
- [82] Mohammed Ahmed, Yuki Nojima, Satoshi Nihonyanagi, Shoichi Yamaguchi, and Tahei Tahara, "Comment on 'Phase-sensitive sum frequency vibrational spectroscopic study of air/water interfaces: H_2O , D_2O , and diluted isotopic mixtures' [J. Chem. Phys. 150, 144701 (2019)]", *J. Chem. Phys.* **152** (2020) 237101.
- [83] Anton Myalitsin, Sanat Ghosh, Shu-hei Urashima, Satoshi Nihonyanagi, Shoichi Yamaguchi, Takashi Aoki, and Tahei Tahara, "Structure of Water and Polymer at the Buried Polymer/Water Interface Unveiled by Heterodyne-Detected Vibrational Sum Frequency Generation", *Phys. Chem. Chem. Phys.* **22** (2020) 16527-16531.
- [84] Mohammed Ahmed, Satoshi Nihonyanagi, Achintya Kundu, Shoichi Yamaguchi, and Tahei Tahara, "Resolving the Controversy over Dipole versus Quadrupole Mechanism of Bend Vibration of Water in Vibrational Sum Frequency Generation Spectra", *J. Phys. Chem. Lett.* **11** (2020) 9123-9130.
- [85] Takuhiro Otsu and Shoichi Yamaguchi, "Leaflet-Specific Lipid Diffusion Revealed by Fluorescence Lifetime Correlation Analyses", *Chem. Lett.* **49** (2020) 1473-1480.
- [86] Shoichi Yamaguchi and Takuhiro Otsu, "Progress in phase-sensitive sum frequency generation spectroscopy", *Phys. Chem. Chem. Phys.* **23** (2021) 18253-18267.

- [87] Yuki Nojima and [Shoichi Yamaguchi](#), "Heterodyne-detected sum frequency generation spectroscopic study of weakly hydrogen-bonded water at charged lipid interfaces, revisited", *J. Phys. Chem. C* **125** (2021) 23483-23489.
- [88] Prashant C. Singh, Mohammed Ahmed, Satoshi Nihonyanagi, [Shoichi Yamaguchi](#), and Tahei Tahara, "DNA-Induced Reorganization of Water at Model Membrane Interfaces Investigated by Heterodyne-Detected Vibrational Sum Frequency Generation Spectroscopy", *J. Phys. Chem. B* **126** (2022) 840-846.
- [89] [Shoichi Yamaguchi](#), Roumiana Tsenkova, and Hiro-o Hamaguchi, "Editorial on the special issue of JRS on Vibrational Spectroscopy of Water", *J. Raman Spectrosc.* **53** (2022) 1654-1655.
- [90] Senri Ishihara, Tetsuyuki Takayama, Miyuki Sakaguchi, Takuhiro Otsu, Takuma Yagasaki, Yoshiharu Suzuki, and [Shoichi Yamaguchi](#), "Raman spectroscopy of isotopically pure and diluted high- and low-density amorphous ices", *J. Raman Spectrosc.* **53** (2022) 1773-1784.
- [91] Tetsuyuki Takayama, Kota Kishi, Takuhiro Otsu, Takuma Yagasaki, and [Shoichi Yamaguchi](#), "Experimental and theoretical Raman spectroscopy of isotopically pure and diluted ice VI", *J. Phys. Chem. C* **126** (2022) 17359-17365.
- [92] [Shoichi Yamaguchi](#), Tetsuyuki Takayama, Yuki Goto, Takuhiro Otsu, and Takuma Yagasaki, "Experimental and theoretical heterodyne-detected sum frequency generation spectroscopy of isotopically pure and diluted water surfaces", *J. Phys. Chem. Lett.* **13** (2022) 9649-9653.
- [93] Tetsuyuki Takayama, Takuhiro Otsu, and [Shoichi Yamaguchi](#), "Transferability of vibrational spectroscopic map from TIP4P to TIP4P-like water models", *J. Chem. Phys.* **158** (2023) 136101.
- [94] Achintya Kundu, [Shoichi Yamaguchi](#), and Tahei Tahara, "Local pH at nonionic and zwitterionic lipid/water interfaces revealed by heterodyne-detected electronic sum-frequency generation: A unified view to predict interfacial pH of biomembrane", *J. Phys. Chem. B* **127** (2023) 5445-5452.
- [95] [Shoichi Yamaguchi](#), Tetsuyuki Takayama, and Takuhiro Otsu, "Appraisal of TIP4P-type models at water surface", *J. Chem. Phys.* **159** (2023) 171101.
- [96] Korenobu Matsuzaki, [Shoichi Yamaguchi](#), and Tahei Tahara, "Complex phase of the nonresonant background in sum frequency generation spectroscopy", *J. Chem. Phys.* **159** (2023) 224708.

[97] Kosei Shimizu, Miyuki Sakaguchi, Shoichi Yamaguchi, and Takuhiro Otsu, "Peripheral Adsorption of Polylysine on One Leaflet of a Lipid Bilayer Reduces the Lipid Diffusion of Both Leaflets", *Phys. Chem. Chem. Phys.* **26** (2024) 8873-8878.

[98] Tetsuyuki Takayama, Takuhiro Otsu, and Shoichi Yamaguchi, "Theoretical and experimental OD-stretch vibrational spectroscopy of heavy water", *J. Chem. Phys.* **160** (2024) 104504.

[99] Ikumi Mori, Shun Terasaka, Shoichi Yamaguchi, and Takuhiro Otsu, "Diffusion of Multiple Species Resolved by Fluorescence Lifetime Recovery After Photobleaching (FLRAP)", *Anal. Chem.* **96** (2024) 4854-4859.

和文論文・総説・解説

[1] 山口祥一, 浜口宏夫, "ナノ、ピコ、フェムト秒時間分解分光で観た溶液中のレチナル分子の光異性化過程", 季刊化学総説 No.44 超高速化学ダイナミクス, 2000年, 日本化学会編, 学会出版センター.

[2] 山口祥一, "超短レーザーパルスの取扱い", 第5版実験化学講座9物質の構造I分光上第1章2節3項, 2005年, 丸善.

[3] 山口祥一, 田原太平, "新しい界面選択的な偶数次非線形分光", 表面科学 **28** (2007) 682-687.

[4] 山口祥一, 田原太平, "界面を選択的に観察する偶数次非線形分光", バイオインダストリー (3月号) **25** (2008) 72-79.

[5] 山口祥一, 田原太平, "埋もれた界面に光を当てる - 電子和周波発生と四次非線形ラマン分光で界面を見る", 化学 (3月号) **63** (2008) 18-23.

[6] 山口祥一, 田原太平, "界面を観る新しい偶数次非線形分光", 分光研究 **57** (2008) 168-178.

[7] 山口祥一, 二本柳聡史, 田原太平, "新しい界面選択的な偶数次非線形振動分光", オプトロニクス **28** (2009) 115-121.

[8] 山口祥一, 二本柳聡史, 田原太平, "新しい界面選択的な偶数次非線形分光", *Review of Polarography* **55** (2009) 83-96.

[9] 山口祥一, 細井晴子, 田原太平, "二光子吸収材料の非線形光学スペクトル測定", 高効率二光子吸収材料の開発と応用 第4章2節, 61-73, 2011年, シーエムシー出版.

[10] 二本柳聡史, 山口祥一, Jahur A. Mondal, 田原太平, "新しい非線形分光で明らかになる液体界面の局所分子構造 – 和周波発生へのヘテロダイン検出 –, 光学 **40** (2011) 415-420.

[11] 山口祥一, "液体の表面の分光分析", HORIBA Technical Reports Readout, Special issue, October (2011) 14-19.

[12] 二本柳聡史, Prashant C. Singh, 山口祥一, 田原太平, "定常および時間分解ヘテロダイン検出和周波発生分光法の開発と水界面への応用", 分光研究 **62** (2013) 253-263.

[13] 二本柳聡史, 山口祥一, 田原太平, "ヘテロダイン検出振動和周波発生分光法による水界面における水素結合構造とダイナミクスの解明", Electrochemistry **82** (2014) 766-770.

[14] 井上賢一, Prashant C. Singh, 二本柳聡史, 山口祥一, 田原太平, "時間分解ヘテロダイン検出振動和周波発生分光法を用いた水界面の超高速振動ダイナミクスの研究", 表面科学 **35** (2014) 662-667.

[15] 山口祥一, "ヘテロダイン検出和周波発生分光", 表面・界面技術ハンドブック 第2編第2章第4節第2項, 283-289, 2016年, エヌ・ティー・エス.

[16] 山口祥一, "液体表面研究のための位相敏感和周波発生分光法", 光学 **51** (2022) 441-447.

[17] 高山哲侑, 山口祥一, "振動分光の実験と理論計算による結晶氷の分子構造研究", 日本結晶成長学会誌 **51** (2024) 01-10.

国内特許

[1] 山口祥一, 佐々木豊, "変調・高速時間分解分光法", 特許公開 2001-041889.

[2] 山口祥一, 佐々木豊, 大橋豊史, "チタニルフタロシアニン化合物およびそれを用いた電子写真感光体", 特許公開 2001-302940.

[3] 山口祥一, 佐々木豊, "一重項酸素発生量子効率の測定方法および化合物の耐光性試験方法", 特許公開 2002-365218.

[4] 山口祥一, 田原太平, "電子スペクトル測定方法及び装置", 特許公開 2006-145406.

国際学会招待講演

[1] "Fourth-Order Coherent Raman Spectroscopy for Buried Interfaces", *Oral Presentation*, Shoichi Yamaguchi and Tahei Tahara, *20th International Conference on Raman Spectroscopy (ICORS)*, August 2006, Yokohama, Japan.

[2] "Novel Interface-Selective Even-Order Nonlinear Spectroscopy", *Oral Presentation*, Shoichi Yamaguchi and Tahei Tahara, *11th East Asian Workshop on Chemical Dynamics*, May 2007, Tokyo, Japan.

[3] "New Interface-Selective Even-Order Nonlinear Spectroscopy", *Oral Presentation*, Shoichi Yamaguchi and Tahei Tahara, *7th Pacific Rim Conference on Lasers and Electro-Optics (CLEO-PR)*, August 2007, Seoul, South Korea.

[4] "Novel Interface-Selective Even-Order Nonlinear Spectroscopy", *Oral Presentation*, Shoichi Yamaguchi and Tahei Tahara, *35th annual Federation of Analytical Chemistry and Spectroscopy Societies (FACSS 2008)*, September 2008, Reno, Nevada, USA.

[5] "Interface-Selective Heterodyne-Detected Second-Order Nonlinear Spectroscopy", *Oral Presentation*, Shoichi Yamaguchi, *Morino Lecture / International Workshop on Chemistry in the Earth's Atmosphere*, September 2009, Tokyo, Japan.

[6] "Interface-Selective Heterodyne-Detected Second-Order Nonlinear Spectroscopy", *Oral Presentation*, Shoichi Yamaguchi and Tahei Tahara, *2nd Asian Spectroscopy Conference*, November 2009, Seoul, South Korea.

[7] "Interface-Selective Heterodyne-Detected Second-Order Nonlinear Spectroscopy", *Oral Presentation*, Shoichi Yamaguchi and Tahei Tahara, *Mini-Workshop on Liquid Surface*, December 2009, Seoul, South Korea.

[8] "Interface-Selective Even-Order Nonlinear Spectroscopy", *Oral Presentation*, Shoichi Yamaguchi, *The 3rd Asia-Pacific Symposium on Radiation Chemistry*, September 2010, Lonavala, India.

- [9] "Interface-Selective Heterodyne-Detected Second-Order Nonlinear Spectroscopy", *Oral Presentation*, Shoichi Yamaguchi, *15th East Asian Workshop on Chemical Dynamics*, May 2011, Pohang, South Korea.
- [10] "Nonlinear Laser Spectroscopy for Surfaces and Interfaces of Liquids", *Oral Presentation*, Shoichi Yamaguchi, *CAS-RIKEN Frontier Science Workshop 2012*, May 2012, Oiso, Japan.
- [11] "Interface-Selective Heterodyne-Detected Second-Order Nonlinear Vibrational Spectroscopy", *Oral Presentation*, Shoichi Yamaguchi, *23rd International Conference on Raman Spectroscopy (ICORS)*, August 2012, Bangalore, India.
- [12] "Interface-Selective Heterodyne-Detected Second-Order Nonlinear Spectroscopy", *Oral Presentation*, Shoichi Yamaguchi, *CRC International Symposium. New Challenges on the Bio-interfaces: Structures and Dynamics*, February 2013, Sapporo, Japan.
- [13] "Heterodyne-Detected SFG Spectroscopy for Liquid Interfaces", *Oral Presentation*, Shoichi Yamaguchi, *Symposium on Molecular Science and Synthesis of Functional Molecules for Next Generation*, March 2014, Hiroshima, Japan.
- [14] "Heterodyne-Detected SFG Spectroscopy for Liquid Interfaces", *Oral Presentation*, Shoichi Yamaguchi, *New Developments in Surface Spectroscopy and Microscopy in 97th Canadian Chemistry Conference and Exhibition*, June 2014, Vancouver, Canada.
- [15] "Single-Channel Heterodyne-Detected Sum Frequency Generation Spectroscopy for Liquid Interfaces", *Oral Presentation*, Shoichi Yamaguchi, *Pacificchem 2015*, December 2015, Honolulu, Hawaii, USA.
- [16] "Molecular Structure of Liquid Interfaces Probed by Sum Frequency Generation Spectroscopy", *Oral Presentation*, Shoichi Yamaguchi, *2nd International Workshop on Heterogeneous Kinetics Related to Atmospheric Aerosols*, November 2016, Tsukuba, Japan.
- [17] "Heterodyne-Detected Sum Frequency Generation Spectroscopy of Aqueous Interfaces", *Oral Presentation*, Shoichi Yamaguchi, *253rd ACS National Meeting*, April 2017, San Francisco, California, USA.
- [18] "Aqueous Interfaces Probed by Heterodyne-Detected Sum Frequency Generation Spectroscopy", *Oral Presentation*, Shoichi Yamaguchi, *9th International Conference on Advanced Vibrational Spectroscopy*, June 2017, Victoria, Canada.

- [19] "Surface vibrational spectra of water and ice", *Oral Presentation*, [Shoichi Yamaguchi](#), *International Symposium on "Diversity of Chemical Reaction Dynamics"*, July 2017, Himeji, Japan.
- [20] "Heterodyne-Detected SFG Spectroscopy of Ice", *Oral Presentation*, [Shoichi Yamaguchi](#), *Trombay Symposium on Radiation & Photochemistry (TSRP-2018)*, January 2018, Mumbai, India.
- [21] "Heterodyne-Detected SFG Spectroscopy of Ice Surface & Lipid Interfaces", *Oral Presentation*, [Shoichi Yamaguchi](#), *Telluride workshop "Nonlinear Optics at Interfaces"*, June 2018, Telluride, Colorado, USA.
- [22] "Surface Structure of Ice Ih Revealed by Sum Frequency Generation Spectroscopy and Theoretical Modeling", *Oral Presentation*, [Shoichi Yamaguchi](#), *IMS Symposium "Water at Interfaces 2018"*, January 2019, Okazaki, Japan.
- [23] "Vibrational Spectroscopy of Ice", *Oral Presentation*, [Shoichi Yamaguchi](#), *International Workshop on Nonlinear Optics at Interfaces*, June 2019, Shanghai, China.
- [24] "Heterodyne-detected sum frequency generation spectroscopy of isotopically-diluted water/vapor interfaces", *Oral Presentation*, [Shoichi Yamaguchi](#), *Pacificchem 2021*, December 2021, Honolulu, Hawaii, USA. (online)
- [25] "Heterodyne-detected sum frequency generation spectroscopy of isotopically-diluted water/vapor interfaces", *Oral Presentation*, [Shoichi Yamaguchi](#), *Trombay Symposium on Radiation & Photochemistry (TSRP-2022)*, January 2022, Mumbai, India. (online)
- [26] "Surface SFG Spectroscopy of Water", *Oral Presentation*, [Shoichi Yamaguchi](#), *Telluride workshop "Nonlinear Optics at Interfaces"*, June 2022, Telluride, Colorado, USA.
- [27] "Surface SFG Spectroscopy of Ice", *Oral Presentation*, [Shoichi Yamaguchi](#), *Telluride workshop "Structure and Dynamics of Ice Surfaces"*, June 2022, Telluride, Colorado, USA.
- [28] "Surface SFG Spectroscopy of Water", *Oral Presentation*, [Shoichi Yamaguchi](#), *International Conference on "Nonlinear Optics at Interfaces"*, June 2023, Rome, Italy.
- [29] "Surface SFG Spectroscopy of Water", *Oral Presentation*, [Shoichi Yamaguchi](#), *8th Asian Spectroscopy Conference (ASC2023)*, September 2023, Tokamachi, Niigata, Japan.

国内学会招待講演

- [1] “界面選択的な偶数次非線形分光”，口頭発表，山口祥一・田原太平，日本分光学会顕微分光部会シンポジウム「ナノスケール表面での顕微分光」，2006年12月，理化学研究所，和光市.
- [2] “ヘテロダイン検出二次非線形分光の開発と応用”，口頭発表，山口祥一・田原太平，理研・特定領域研究高次系分子科学・SFG研究会合同シンポジウム「表面・界面を観る非線形分光の新しい展開」，2009年3月，理化学研究所，和光市.
- [3] “界面選択的なヘテロダイン検出二次非線形分光の開発と応用”，口頭発表，山口祥一，エクストリームフォトニクスシンポジウム，2009年5月，理化学研究所，和光市.
- [4] “界面選択的ヘテロダイン検出二次非線形分光の開発と応用”，口頭発表，山口祥一，The 3rd Mini-Symposium on Liquids，2009年6月，岡山大学，岡山市.
- [5] “新しい界面選択的ヘテロダイン検出二次非線形分光”，口頭発表，山口祥一，特定領域研究高次系分子科学シンポジウム「イオンチャネルの構造ダイナミクス II」，2009年9月，越前町生涯学習センター越前分館，福井県丹生郡.
- [6] “新しい界面選択的非線形分光”，口頭発表，山口祥一・田原太平，日本分光学会高感度表面・界面分光部会第2回シンポジウム，2009年12月，産業技術総合研究所，つくば市.
- [7] “界面選択的なヘテロダイン検出和周波発生分光”，口頭発表，山口祥一，高分子表面研究会，2010年10月，東京理科大学森戸記念館，東京都.
- [8] “新しい高感度非線形レーザー分光法の開発と界面分子構造研究への応用”，口頭発表，山口祥一，2011 堀場雅夫賞受賞記念セミナー，2011年10月，京都大学芝蘭会館，京都市.
- [9] “ヘテロダイン検出和周波発生分光の液体界面への応用”，口頭発表，山口祥一，高次系分子科学第6回合同班会議，2011年12月，沖縄残波岬ロイヤルホテル，沖縄県.
- [10] “ヘテロダイン検出和周波発生液体界面への応用”，口頭発表，山口祥一，「高次系分子科学」第14回ミニ公開シンポジウム・北海道大学低温科学研究所共同利用研究集会合同研究会，2012年1月，北海道大学低温科学研究所，札幌市.

[11] “ヘテロダイン検出和周波発生 of 液体界面への応用”, 口頭発表, 山口祥一, 第 5 回 SFG 研究会, 2012 年 3 月, 東北大学工学研究科青葉記念会館, 仙台市.

[12] “ヘテロダイン検出電子和周波発生分光法とその応用”, 口頭発表, 山口祥一, 第 73 回表面科学研究会, 2012 年 3 月, 東京理科大学森戸記念館, 東京都.

[13] “ヘテロダイン検出和周波発生分光”, 口頭発表, 山口祥一, 2013 年真空・表面科学合同講演会, 2013 年 11 月, つくば国際会議場, つくば市.

[14] “ヘテロダイン検出和周波発生による界面の水の研究”, 口頭発表, 山口祥一, 第 59 回ポーラログラフィーおよび電気分析化学討論会, 2013 年 11 月, 石垣市民会館, 石垣市.

[15] “界面選択的ヘテロダイン検出和周波発生分光”, 口頭発表, 山口祥一, 第 52 回光波センシング技術研究会, 2013 年 12 月, 東京理科大学森戸記念館, 東京都.

[16] “二次非線形レーザー分光法による液体界面の研究”, 口頭発表, 山口祥一, 第 22 回光合成セミナー2014: 反応中心と色素系の多様性, 2014 年 7 月, 名古屋工業大学, 名古屋市.

[17] “Heterodyne-detected sum frequency generation spectroscopy of the water/vapor interface”, 口頭発表, 山口祥一, 化学系学協会東北大会, 2015 年 9 月, 弘前大学, 弘前市.

[18] “Heterodyne-detected sum frequency generation spectroscopy for water/vapor and lipid/water interfaces”, 口頭発表, 山口祥一, 第 7 回 SFG 研究会, 2016 年 6 月, 東京工業大学, 東京都.

[19] “水と氷の表面のヘテロダイン検出和周波発生分光”, 口頭発表, 山口祥一, 第 39 回キャピラリー電気泳動シンポジウム, 2019 年 11 月, 埼玉大学, さいたま市.

[20] “水と氷の表面のヘテロダイン検出和周波発生分光”, 口頭発表, 山口祥一, 第 30 回ソノケミストリー討論会, 2021 年 10 月, オンライン (埼玉大学, さいたま市).

[21] “水表面の和周波発生分光の実験と計算: これまでとこれから”, 口頭発表, 山口祥一, 第 17 回分子科学討論会, 2023 年 9 月, 大阪大学, 大阪市.

国際学会発表（招待講演除く）

[1] "Picosecond dynamics of photoexcited transient species of p-phenylenes; population decay and structural change", *Poster Presentation*, Shoichi Yamaguchi and Hiro-o Hamaguchi, *XIVth International Conference on Raman Spectroscopy (ICORS)*, August 1994, Hong Kong.

[2] "Femtosecond photophysics and photochemistry of retinal isomers", *Poster Presentation*, Shoichi Yamaguchi and Hiro-o Hamaguchi, *International Workshop on Femtosecond Technology*, February 1996, Tsukuba, Japan.

[3] "Effect of Electric Field and Adsorbed Water upon Primary Carrier-Generation Process in Titanyl Phthalocyanine", *Oral Presentation*, Shoichi Yamaguchi, Yutaka Sasaki, Toyoshi Ohashi, and Tetsuo Murayama, *Japan Hardcopy 2000*, June 2000, Tokyo, Japan.

[4] "Effect of water on primary photocarrier-generation process in Y-form titanyl phthalocyanine", *Poster Presentation*, Shoichi Yamaguchi and Yutaka Sasaki, *SPIE's International Symposium on Optical Science and Technology*, July 2000, San Diego, USA.

[5] "Effect of Electric Field and Adsorbed Water upon Primary Carrier-Generation Process in Titanyl Phthalocyanine", *Poster Presentation*, Shoichi Yamaguchi and Yutaka Sasaki, *Gordon Research Conference*, August 2000, New Port, Rhode Island, USA.

[6] "Highly Sensitive Luminescence Measurement for Determination of Very Low Quantum Yield of Singlet Oxygen Formation Photosensitized by Dyes and Pigments", *Oral Presentation*, Shoichi Yamaguchi, Yutaka Sasaki, Kimiya Takeshita, Yukichi Murata, and Tetsuo Murayama, *International Conference on Imaging Science*, May 2002, Tokyo, Japan.

[7] "Precise Two-Photon Absorption Measurements of Biomolecules using Femtosecond Broadband Pulses", *Poster Presentation*, Shoichi Yamaguchi and Tahei Tahara, *226th ACS National Meeting*, September 2003, New York, USA.

[8] "Multiplex Electronic Sum Frequency Generation Spectroscopy of Dye Molecules at the Air/Water Interface", *Poster Presentation*, Shoichi Yamaguchi and Tahei Tahara, *Femtochemistry VII*, August 2005, Washington D. C., USA.

- [9] "Electronic $\chi^{(2)}$ Multiplex Sum Frequency Generation Spectroscopy of Dye Molecules at the Air/Water Interface", *Oral Presentation*, [Shoichi Yamaguchi](#) and Tahei Tahara, *Pacificchem 2005*, December 2005, Honolulu, USA.
- [10] "Fourth-Order Coherent Vibrational Spectroscopy for Buried Interfaces", *Poster Presentation*, [Shoichi Yamaguchi](#) and Tahei Tahara, *International Workshop on Time-Resolved Spectroscopy*, August 2006, Wako, Japan.
- [11] "Novel Even-Order Nonlinear Spectroscopy for Liquid Interfaces: Interface-Specific Hydrogen Bonds and Interfacial Polarity", *Oral Presentation*, [Shoichi Yamaguchi](#), Sobhan Sen, and Tahei Tahara, *233rd ACS National Meeting*, March 2007, Chicago, USA.
- [12] "Interferometric Measurement of Electronic Sum Frequency Generation for Revealing Absolute Orientation of Interfacial Molecules: Real and Imaginary Parts of Electronic $\chi^{(2)}$ Spectrum", *Poster Presentation*, [Shoichi Yamaguchi](#) and Tahei Tahara, *67th Okazaki Conference*, November 2007, Okazaki, Japan.
- [13] "Two-Dimensional Heterodyne-Detected Vibrational Sum Frequency Generation Spectroscopy", *Oral Presentation*, [Shoichi Yamaguchi](#), *14th International Conference on Vibrations at Surfaces*, September 2012, Kobe, Japan.
- [14] "Surface Structure of Ice Ih Revealed by Sum Frequency Generation Spectroscopy and Theoretical Modeling", *Oral Presentation*, [Shoichi Yamaguchi](#), Yuki Nojima, and Hajime Torii, *Joint Conference of EMLG/JMLG Annual Meeting 2018 and 41st Symposium on Solution Chemistry of Japan "Understanding of Molecular Liquids and Its Extension to New Fields"*, November 2018, Nagoya, Japan.
- [15] "Heterodyne-detected sum frequency generation spectroscopy of isotopically-diluted water/vapor interfaces", *Oral Presentation*, [Shoichi Yamaguchi](#), *ACS Fall 2021 National Meeting & Exposition*, August 2021, Online (Atlanta, Georgia).
- [16] "Liposome diffusion on a glass-supported lipid bilayer", *Poster Presentation*, Ten Miyazaki, Miyuki Sakaguchi, [Shoichi Yamaguchi](#), and Takuhiro Otsu, *ACS Spring 2022 National Meeting & Exposition*, March 2021, Online (San Diego, California).
- [17] "Development of a diamond anvil cell confocal Raman microscope and its application to high-pressure phases of ice and clathrate hydrate", *Poster Presentation*, Kota Kishi, Tetsuyuki Takayama, Miyuki Sakaguchi, Takuhiro Otsu, and [Shoichi Yamaguchi](#), *ACS Spring 2022 National Meeting & Exposition*, March 2021, Online (San Diego, California).

[18] "Raman spectroscopy of isotopically pure and diluted low- and high-density amorphous ices", *Poster Presentation*, Senri Ishihara, Miyuki Sakaguchi, Takuhiro Otsu, and Shoichi Yamaguchi, *ACS Spring 2022 National Meeting & Exposition*, March 2021, Online (San Diego, California).

研究集会主催

[1] William F. Meggars Award Session, *35th annual Federation of Analytical Chemistry and Spectroscopy Societies (FACSS 2008)*, October 1, 2008, Reno, Nevada, USA.

[2] 理研・特定領域研究高次系分子科学・SFG研究会合同シンポジウム「表面・界面を観る非線形分光の新しい展開」, 2009年3月23, 24日, 理化学研究所, 和光市.

[3] 日本分光学会先端レーザー分光部会シンポジウム「若手研究者たちによる先端的レーザー分光シンポジウム」, 2013年12月3日, 理化学研究所, 和光市.

[4] 新学術領域柔らかな分子系ワークショップ「氷の分子科学」, 2017年5月13日, 埼玉大学, さいたま市.

[5] Saitama SFG Colloquium, 2017年10月12日, 埼玉大学, さいたま市.

[6] 日本分光学会先端レーザー分光部会シンポジウム「若手研究者たちによる先端的レーザー分光シンポジウム」, 2017年12月2日, 埼玉大学, さいたま市.

[7] さいたま分光セミナー, 2018年5月16日, 埼玉大学, さいたま市.

[8] The 8th SFG Symposium, 2018年10月26, 27日, JA 共済埼玉ビル, さいたま市.

[9] シンポジウム「氷の分子科学II」, 2019年10月9日, 埼玉大学, さいたま市.

[10] Saitama SFG Colloquium II, 2022年11月22日, 埼玉大学, さいたま市.

[11] 東葉筑玉合同セミナー, 2023年5月12日, 埼玉大学, さいたま市.