

チーム名： アト秒科学研究チーム

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

1. K. Isobe, K. Toda, Q. Song, F. Kannari, H. Kawano, A. Miyawaki, and K. Midorikawa, "Temporal focusing microscopy combined with three-dimensional structured illumination," Jpn. J. Appl. Phys. Vol. 56, 052501 (2017).
2. J. Xu, H. Kawano, W. Liu, Y. Hanada, P. Lu, A. Miyawaki, K. Midorikawa, and K. Sugioka, "Controllable alignment of elongated microorganisms in a 3D microspace using electrofluidic devices manufactured by hybrid femtosecond laser microfabrication", Microsystems Nanoengin. 3, 16078 (2017).
3. N. Kanda, K. Konishi, N. Nemoto, K. Midorikawa, and M. Kuwata-Gonokami, "Real-time broadband terahertz spectroscopic imaging by using a high-sensitivity terahertz camera," Sci. Rep. 7, 42540 (2017)..
4. C. R. Locke, T. Kobayashi, and K. Midorikawa, "Improved efficiency of selective photoionization of palladium isotopes via autoionizing Rydberg states", Appl. Phys. B 123, 33 (2017).
5. T. Kobayashi, C. R. Locke, and K. Midorikawa, "Spectroscopic investigation of autoionizing Rydberg states of palladium accessible after odd-mass-selective laser excitation", Jap. J. Appl. Phys. Rapid Commun. 56, 010302 (2017).
6. Yu - Chieh Lin, Y. Nabekawa, and K. Midorikawa, "Generation of intense femtosecond optical vortex pulses with blazed - phase grating in chirped - pulse amplification system of Ti:sapphire laser", Appl. Phys. B, 122, 280 (2016).
7. Y. Nabekawa, T. Okino, Y. Furukawa, A. Amani Eilanlou, E. J. Takahashi, K. Yamanouchi, and K. Midorikawa, "Sub-10-fs control of dissociation pathways in the hydrogen molecular ion with a few-pulse attosecond pulse train", Nature Communications, Vol. 7, pp.1285 (2016).
8. K. Yamada, A. Iwasaki, T. Sato, K. Midorikawa, and K. Yamanouchi, "State-selective preparation of  $\text{Ar}^{2+}$  and  $\text{Kr}^{2+}$  by resonantly enhanced two-photon double ionization via intermediate Rydberg states using high-order harmonics," Phys. Rev. A 94, 053414 (2016).
9. C. R. Locke, T. Kobayashi, T. Nakajima, and K. Midorikawa, "Application of an orthogonally polarized laser scheme for selective photoionization of palladium isotopes", Appl. Phys. B 122, 246 (2016).
10. Yu-Chieh Lin, Y. Nabekawa, and K. Midorikawa, "Conical third-harmonic generation of optical vortex through ultrashort laser filamentation in air", Optics Express, Vol. 24, No. 13, 14857-14870 (2016).
11. Y. Fu, E. J. Takahashi, and K. Midorikawa, "Indirect high-bandwidth stabilization of carrier-envelope phase of a high-energy, low-repetition-rate laser", Optics Express 24 (12), 13276-13287 (2016).
12. M. Hatayama, S. Ichimaru, T. Ohcni, E. J. Takahashi, K. Midorikawa and S. Oku, "Wide-range narrowband multilayer mirror for selecting a single-order harmonic in the photon energy range of 40–70 eV", Optics Express 24 (13), 14546-14551 (2016).

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

1. Y. Nabekawa, T. Okino, and K. Midorikawa, "Probing attosecond dynamics of molecules by an intense a-few-pulse attosecond pulse train", Proc. SPIE, Vol. 10328, 103280B (2017).
2. J. Xu, K. Midorikawa, and K. Sugioka, "Femtosecond laser fabricated electrofluidic devices in glass for 3D manipulation of biological samples", Proc. SPIE, Vol. 9735, 97350B (2016).

3. 沖野友哉、鍋川康夫、緑川克美、“アト秒科学の進展”、光技術コンタクト、第 55 巻、第 3 号、24-30 (2017).
4. 沖野友哉、鍋川康夫、緑川克美、“高次高調波によるアト秒量子波束計測”、分光研究、第 65 巻、第 2 号、81-91 (2016).
5. 磯部圭佑、戸田圭亮、緑川克美、“励起光パルスの時空間制御による深部超解像イメージング技術”、レーザー研究 “44、653-657 (2016).
6. 磯部圭佑、緑川克美、“生体試料の深部イメージングを可能にする空間重なり変調非線形光学顕微鏡”、OPTRONICS、417、74-78 (2016).

(3) 招待講演 / Invited Talks

1. K. Midorikawa, “Capturing attosecond quantum dynamics in molecules by XUV-pump and XUV-probe scheme,” International Workshop on Present and Future of Ultrafast Spectroscopy, Wako, Japan, March 2017.
2. T. Okino, "Observation of Quantum Wavepackets in Molecules with Intense Attosecond Pulse Trains", IOP Publishing Young Researchers' Meeting; Frontiers in Fundamental and Applied Physics, Tokyo, Japan, Feb. (2017).
3. K. Sugioka, F. Sima, J. Xu, and K. Midorikawa, “Hybrid subtractive and additive 3D femtosecond laser processing: application for fabrication of novel biochips”, 3017 Int. Conf. on Frontiers in Theoretical and Applied Physics (FTAPS 2017), Sharjah, UAE, Feb. (2017).
4. F. Sima, D. Serien, D. Wu, J. Xu, K. Midorikawa, and K. Sugioka, “Micro and nano-biomimetic structures for cell migration study fabricated by hybrid subtractive and additive 3D femtosecond laser processing”, SPIE Int. Conf. on Laser-based Micro- and Nanoprocessing XI (LBMN XI), San Francisco, USA, Jan.-Feb. (2017).
5. E. J. Takahashi, "High-Energy Ultrafast Multicolor Laser”, The 9th Asian Symposium on Intense Laser Science (ASILS-9), Ninh Binh City, Vietnam, Nov. (2016).
6. Y. Nabekawa, T. Okino, and K. Midorikawa, “Probing attosecond dynamics of molecules by an intense a- few-pulse attosecond pulse train”, The 31st International Congress on High-speed Imaging and Photonics, Osaka, Japan, Nov. (2016).
7. K. Sugioka, F. Sima, J. Xu, D. Wu, and K. Midorikawa, “Hybrid subtractive and additive 3D femtosecond laser processing for integrated biochip fabrication”, 4th Int. Symp. on Laser Interaction with matter (LIMIS 2016), Chengdu, China, Nov. (2016). Plenary talk
8. A. Amani Eilanlou, Y. Nabekawa, M. Kuwata-Gonokami, and K. Midorikawa, “Development of a thin disk ring oscillator for intra-cavity high-order harmonic generation”, The 14th Kansai Photon Science Institute Seminar, Nara, Japan, Nov. (2016).
9. N. Kanda, K. Konishi, and M. Kuwata-Gonokami, “Spatio-temporal control of terahertz polarization”, Optics & Photonics Japan 2016 OSJ-OSK-TPS Joint Symposium, 1aDS6, Tokyo, Nov. (2016).
10. K. Midorikawa, “Attosecond science at RIKEN”, RIKEN & HUST Joint Symposium, Wuhan, China, Oct. (2016).
11. E. J. Takahashi, "Recent progress on high-energy ultrafast laser systems in RIKEN , RIKEN&HUST Joint Symposium”, Wuhan, China, Oct. (2016).
12. K. Midorikawa, “Attosecond science by intense high-order harmonics”, The 8th International symposium on Ultrafast Phenomena and Terahertz Waves, Chongqing, China, Oct. (2016).
13. K. Midorikawa, “Recent progress on attosecond science at RIKEN”, 29th Annual Conference of the IEEE Photonics Society, Waikoloa, Hawaii USA, Oct. (2016).
14. T. Okino, “Real-time Observation of Quantum Wavepackets of Molecules with a-Few-Pulse Attosecond Pulse Train”, International Symposium on Ultrafast Intense Laser Science 15

- (ISUILS 15), Cassis, France, Oct. (2016).
15. E. J. Takahashi, "High-energy multi-channel waveform synthesizer for generating microjoule-level isolated attosecond pulses", The 2016 IEEE Photonics Conference, 29th Annual Conference of the IEEE Photonics Society, Waikoloa, Hawaii, USA, Oct. (2016).
  16. F. Sima, D. Wu, J. Xu, K. Midorikawa, and K. Sugioka, "Ship-in-a-bottle integration of biomimetic architecture into lab-on-a-chip by femtosecond laser 3D processing, application to cancer research", 24th Int. Conf. on Advanced Laser Technology (ALT' 16), Galway, Ireland, Sept. (2016).
  17. K. Sugioka, J. Xu, F. Sima, H. Kawano, A. Miyawaki, and K. Midorikawa, "Hybrid subtractive and additive 3D microprocessing using femtosecond laser for functional biochip fabrication", The 10th International Conference on Photo-Excited Processes and Applications (ICPEPA-10), Brasov, Romania, August-Sept. (2016).
  18. K. Midorikawa, "High harmonic generation and attosecond science", The 7th Asia Summer School and Symposium on Laser-Plasma Acceleration and Radiation", Shanghai, China, July (2016).
  19. K. Sugioka, J. Xu, F. Sima, H. Kawano, A. Miyawaki, and K. Midorikawa, "Hybrid subtractive and additive 3D processing using femtosecond laser", 2016 Light Conference, Changchun, China, July (2016).
  20. K. Midorikawa, "High Energy Waveform Synthesizer for Generating Intense Isolated Attosecond Pulses", The 18th Gordon Research Conferences on Multiphoton Processes, Andover, NH, USA, June (2016).
  21. F. Sima, D. Wu, J. Xu, K. Midorikawa, and K. Sugioka, "Femtosecond laser micro- and nanoengineering of 3D environments for cancer cell study", Int. Conf. on Small Science (ICSS 2016), Prague, Czech, June (2016).
  22. K. Midorikawa, "Recent progress on attosecond science at RIKEN", COPL-INO-RIKEN 1st symposium in advanced photonics, Quebec, Canada, May (2016).
  23. K. Midorikawa, "Recent progress on attosecond science at RIKEN", 15th International Conference on X-Ray Lasers 2016, Nara, Japan, May (2016).
  24. K. Midorikawa, "Observation of attosecond molecular dynamics by intense attosecond pulses", 7th Shanghai-Tokyo Advanced Research Symposium on Ultrafast Intense Laser Science, Hayama, Japan, May (2016).
  25. K. Midorikawa, S. Wada, N. Saito, K. Kase, Y. Otake, and Y. Ikeda, "Nondestructive inspection of infrastructures by laser and neutron beam technology", Laser Solution for Space and the Earth (LSSE2016), Yokohama, Japan, May (2016).
  26. E. J. Takahashi, "High-energy Ultrafast IR Laser Pulses by Dual-chirped Optical Parametric Amplification", The 10th Asia-Pacific Laser Symposium (APLS2016), Jeju Island, Korea, May (2016).
  27. 緑川克美, "アト秒科学の進展", 2016 年度応用物理学会量子エレクトロニクス研究会, 軽井沢, 12月, 2016.
  28. 神田夏輝, "共振器内高次高調波発生のための高強度モードロックレーザー開発", 第46回極限コヒーレント光科学セミナー, 11月, 千葉 (2016).
  29. 神田夏輝, "高感度テラヘルツカメラによるテラヘルツ分光イメージング", 第8回テラテクビジネスセミナー, 9月, 横浜 (2016).
  30. 緑川克美, "光量子ビームによる非破壊インフラ診断技術の開発", 理研シンポジウム「社会に貢献する理研の工学研究」, 和光, 7月, 2016.
  31. 緑川克美, "アト秒科学の進展", (基調講演), 第85回レーザー加工学会, 大阪, 6月, 2016.
  32. 緑川克美, "高次高調波によるアト秒量子波束の観測", AMO討論会, 和光, 6月,

2016.

33. 神田夏輝、小西邦昭、五神真、“カイラルメタマテリアルによる THz 波偏光制御”、第 3 回超高速光エレクトロニクス研究会「超短パルス長波長光源の進展とその応用」、4 月、和光、(2016).

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

1. The 8th Asian Workshop on Generation and Application of Coherent XUV and X-Ray Radiation, Hsinchu, Taiwan, March 27-29, 12017.
2. The 9th Asian Symposium on Intense Laser Science, Ninh Binh City, Vietnam, Nov. 6-10, 2016.
3. International Symposium on Attosecond Science, Koshiba Hall, The University of Tokyo, July 30 (2016).
4. 理研シンポジウム“第 4 回「光量子工学研究 - 若手・中堅研究者から見た光量子工学の展開-」”、和光、10 月 31 日～11 月 1 日(2016).
5. エクストリームフォトニクスセミナー、Prof. Dr. Akira Endo、“0.5 kW picosecond Yb:YAG regenerative amplifier for deep UV to mid-IR frequency conversion”、和光、8 月 4 日 (2016).

(5) 特許出願 / Patent Applications

1. 磯部圭佑、緑川克美、“非線形光学顕微鏡、空間位相変調器および非線形光学顕微鏡法”、特願 2016-165861、出願日 2016 年 08 月 26 日.
2. 磯部圭佑、緑川克美、“非線形光学顕微鏡および非線形光学顕微鏡法”、特許第 5930220 号、2016 年 05 月 13 日登録 .