

Intense Attosecond Pulse Research Team

Publications (Original Paper)

1. S. Nakashima, K. Sugioka, and K. Midorikawa: "Space-selective modification of magnetic properties in Fe³⁺-doped transparent glass by irradiation with femtosecond laser", *Applied Physics A*, in press (2011).
2. Q. Zhang, E. J. Takahashi, O. D. Mueke, P. Lu and K. Midorikawa: "Dual-chirped optical parametric amplification for generating few hundred mJ infrared pulses", *Opt. Exp.*, 19, 7190-7212 (2011).
3. T. Togashi, E. J. Takahashi, K. Midorikawa, M. Aoyama, K. Yamakawa, T. Sato, A. Iwasaki, S. Owada, T. Okino, K. Yamanouchi, F. Kannari, A. Yagishita, H. Nakano, M. E. Couprie, K. Fukami, T. Hatsui, T. Hara, T. Kameshima, H. Kitamura, N. Kumagai, S. Matsubara, M. Nagasono, H. Ohashi, T. Ohshima, Y. Otake, T. Shintake, K. Tamasaku, H. Tanaka, T. Tanaka, K. Togawa, H. Tomizawa, T. Watanabe, M. Yabashi, and T. Ishikawa Tetsuya: "Extreme ultraviolet free electron laser seeded with high-order harmonic of Ti:sapphire laser", *Opt. Exp.*, 19(1), 317-324, (2011).
4. T. Kobayashi and Y. Matsuo: "Study on the Carbon Fragment Anions Produced by Femtosecond Laser Ablation of Solid C₆₀", *J. Chem. Phys.* 134, 064320 (2011).
5. S. Nakashima, K. Sugioka, T. Ito, H. Takai and K. Midorikawa: "Fabrication of high-aspect-ratio nanohole arrays on GaN surface by using wet-chemical-assisted femtosecond laser ablation", *J. Laser Micro/Nanoengin.* 6, 15-19 (2011).
6. S. Beke, L. Kőrösi, K. Sugioka, K. Midorikawa, and I. Dékány: "Three-dimensionally embedded indium tin oxide (ITO) films in photosensitive glass: a transparent and conductive platform for microdevices", *Appl. Phys. A102*, 265-269 (2011).
7. L. L. Qiao, F. He, C. Wang, Y. Cheng, K. Sugioka, and K. Midorikawa: "A microfluidic chip integrated with a microoptical lens fabricated by femtosecond laser micromachining", *Appl. Phys. A102*, 179-183 (2011).
8. S. Beke, T. Kobayashi, K. Sugioka, K. Midorikawa, J. Bonse: "Time-of-flight mass spectroscopy of femtosecond and nanosecond laser ablated TeO₂ crystals", *Intl. J. Mass Spectrometry.* 299, 5-8 (2011).
9. K. Katahira, H. Ohmori, J. Komotori, D. Dornfeld, Y. Akahane, H. Kotani and M. Mizutani, "Modification of surface properties on a nitride based coating films through mirror-quality finish grinding", *Annals of the CIRP*, 59/1, 593-596, (2010).
10. M. Kurata-Nishimura, Y. Ando, T. Kobayashi, Y. Matsuo, H. Suzuki, Y. Hayashizaki, and J. Kawai: "Sequencing of Isotope-Labelled Small RNA Using Femtosecond Laser Ablation Time-of-Flight Mass Spectrometry", *Appl. Phys. Express* 3, 047002 (2010).
11. F. He, Y. Cheng, L. Qiao, C. Wang, Z. Xu, K. Sugioka, K. Midorikawa, and J. Wu: "Two-photon fluorescence excitation with a microlens fabricated on the fused silica chip by femtosecond laser micromachining", *Appl. Phys. Lett.* 96, 041108 (2010).
12. Y. Kawano and K. Ishibashi, "Scanning nanoelectrometer based on a two-dimensional electron gas transistor with a probe-integrated gate electrode", *Applied Physics Letters* **96**, 142109-1-3 (2010).
13. J. W. Song, G. R. Aizin, J. Mikalopas, Y. Kawano, K. Ishibashi, N. Aoki, J. L. Reno, Y. Ochiai, and J. P. Bird, "Bolometric THz detection in pinched-off quantum point contacts", *Applied Physics Letters* **97**, 083109-1-3 (2010).
14. H. Hashimoto, K. Isobe, A. Suda, F. Kannari, H. Kawano, H. Mizuno, A. Miyawaki, and K. Midorikawa, "Measurement of two-photon excitation spectra of fluorescent proteins with nonlinear Fourier-transform spectroscopy", *Appl. Opt.* 49, 3323 (2010).
15. S. Nakashima, K. Sugioka, and K. Midorikawa: "Enhancement of resolution and quality of nano-hole structure on GaN substrates using the second-harmonic beam of near-infrared femtosecond laser", *Appl. Phys. A101*, 475-481 (2010).
16. E. J. Takahashi, T. Kanai and K. Midorikawa: "High-order harmonic generation by an ultrafast infrared pulse", *Appl. Phys. B* 100, 29 (2010).
17. Y. Nabekawa, Y. Furukawa, A. Amani Eilanlou, K. L. Ishikawa, H. Takahashi and K. Midorikawa: "Multi-terawatt laser system generating 12-fs pulses at 100 Hz repetition rate", *Appl. Phys. B* 101 (3), 523-534 (2010).
18. K. Isobe, H. Hashimoto, A. Suda, F. Kannari, H. Kawano, H. Mizuno, A. Miyawaki, and K. Midorikawa, "Measurement of two-photon excitation spectrum used to photoconvert a fluorescent protein (Kaede) by nonlinear Fourier-transform spectroscopy", *Biomed. Opt. Express*, 1, 687 (2010).
19. K. Isobe, A. Suda, H. Hashimoto, F. Kannari, H. Kawano, H. Mizuno, A. Miyawaki, and K. Midorikawa, "High-resolution fluorescence microscopy based on a cyclic sequential multiphoton process", *Biomed. Opt. Express*, 1, 791 (2010).
20. Y. Liao, M. Huan, Y. Ju, F. Luo, Y. Cheng, Z. Xu, K. Sugioka, and K. Midorikawa: "Alignment of liquid crystal molecules in a micro-cell fabricated by femtosecond laser", *Chem. Phys. Lett.* 498, 188-191

(2010).

21. T. Furukawa, Y. Matsuo, A. Hatakeyama, K. Fujitake, Y. Matsuura, T. Kobayashi, T. Shimoda: "Laser Spectroscopy on Exotic RI Atoms in Superfluid Helium - OROCHI Experiment-", *Hyperfine Interaction* 196, 191 (2010).
22. K. Isobe, A. Suda, M. Tanaka, H. Hashimoto, F. Kannari, H. Kawano, H. Mizuno, A. Miyawaki, and K. Midorikawa, "Nonlinear optical microscopy and spectroscopy employing octave spanning pulses," *IEEE J. Sel. Top. Quant. Electron.* 16, 767 (2010).
23. H. Ohmori, Y. Uehara, Y. Hachisu and J. Koizumi "Nanoprecision CNC Desktop Micro-Processing Machine", *International Forum on Micro Manufacturing 2010*, 271-276, (2010).
24. H. Ohmori, Y. Uehara and K. Katahira, "Development of a Desktop Machine Tool for Mirror Surface Grinding", *International Journal of Automation Technology*, 4/2, 88-96, (2010).
25. H. Ohmori, Y. Uehara and K. Katahira, "Fabrication of Ultrafine Tools Using a Desktop Microgrinder", *International Journal of Automation Technology*, 4/2, 97-102, (2010).
26. K. Katahira, H. Ohmori, M. Mizutani and J. Komotori, "Investigation on High-Temperature Oxidization of Mirror-Quality Ground Stainless Steel", *International Journal of Modern Physics B*, 24/15-16, 3005-3010, (2010).
27. H. Ohmori, K. Katahira, M. Mizutani and J. Komotori, "Coloring of Ti Alloy by ELID-Grinding", *Journal of the Japan Society for Abrasive Technology*, 54/9, 532-535, (2010).
28. S. Nakashima, K. Sugioka, and K. Midorikawa: "Improvement of resolution in nano-fabrication of GaN by wet-chemical-assisted femtosecond laser ablation", *J. Laser Micro/Nanoengin.* 5, 21-24 (2010).
29. Y. Liao, J. Xu, Y. Cheng, Z. Xu, K. Sugioka, and K. Midorikawa: "Fabrication of a Y-splitter modulator embedded in LiNbO₃ with a femtosecond laser", *J. Laser Micro/Nanoengin.* 5, 25-27 (2010).
30. A. A. Eilanlou, Y. Nabekawa, K. L. Ishikawa, H. Takahashi, E. J. Takahashi, and K. Midorikawa, "Frequency modulation of high-order harmonic fields with synthesis of two-color laser fields", *Opt. Exp.*, 18 (24), (13 pages) (2010).
31. Jungwoo Song, Gregory Aizin, Yukio Kawano, Koji Ishibashi, Nobuyuki Aoki, Yuichi Ochiai, John L. Reno, and Jonathan P. Bird, "Evaluating the Performance of Quantum Point Contacts as Nanoscale Terahertz Sensors", *Opt. Exp.*, **18**, 4609-4614 (2010).
32. S. Bohman, A. Suda, T. Kanai, S. Yamaguchi and K. Midorikawa: "Generation of 5.0-fs, 5.0-mJ, 1-kHz pulses using hollow-fiber pulse compression", *Opt. Lett.* **35**, 1887-1889 (2010).
33. Y. Liao, Y. Ju, L. Zhang, F. He, Q. Zhang, Y. Shen, D. Chen, M. Huan, Y. Cheng, Z. Xu, K. Sugioka, and K. Midorikawa: "Three-dimensional microfluidic channel with arbitrary length and configuration fabricated inside glass by femtosecond laser direct writing", *Opt. Lett.* 35, 3225-3227 (2010).
34. Y. Kawano and K. Ishibashi, "On-chip near-field terahertz detection based on a two-dimensional electron gas", *Physica E* **42**, 1188-1191 (2010).
35. P. Lan, E. J. Takahashi, and K. Midorikawa: " Wavelength scaling of efficient high-order harmonic generation by two-color infrared laser fields ", *Phys. Rev. A*, 81, 061802(R), (2010)
36. Y. Furukawa, Y. Nabekawa, T. Okino, S. Saugout, K. Yamanouchi and K. Midorikawa: "Nonlinear Fourier transform spectroscopy of D₂ using High-harmonic radiation", *Phys. Rev. A* 82, 013421 (2010).
37. P. Lan, E. J. Takahashi, and K. Midorikawa: " Optimization of infrared two-color multicycle field synthesis for intense-isolated-attosecond-pulse generation ", *Phys. Rev. A*, 82, 053413, (2010).
38. E. J. Takahashi, P. Lan, O. D. Mueck, Y. Nabekawa and K. Midorikawa: "Infrared two-color multicycle laser field synthesis for generating an intense attosecond pulse", *Phys. Rev. Lett.* 104, 233901 (2010).
39. S. Nakashima, K. Sugioka, T. Ito, H. Takai, and K. Midorikawa: "Fabrication of periodic nano-hole array on GaN surface by fs laser for improvement of extraction efficiency in blue LED", *Physics Procedia* 5, 203-211 (2010).

Books, Reviews

1. Y. Kawano, "Terahertz Technology Based on Nano-Electronic Devices", 1 chapter in "Integrated Microsystems: Materials, MEMs, Photonics, Bio Interfaces", edited by Kris Iniewski, (Taylor & Francis Group), in press.
2. K. Midorikawa: "Nonlinear interaction of intense xuv fields with atoms and molecules", *Springer Series in Chemical Physics 94, Lectures on Ultrafast Intense Laser Science 1*, Springer, (2010).
3. K. Sugioka, M. Meunier, and A. Pique (Eds.): "Laser Precision Micorfabrication", (Springer, Berlin). (2010).
4. K. Sugioka and S. Nolte: "3D fabrication of embedded microcomponents", K. Sugioka, M. Meunier, and A. Pique (Eds.), *Laser Precision Micorfabrication*, (Springer, Berlin, 2010) p. 215-238.
5. K. Sugioka and K. Midorikawa: "Major accomplishments in 2009 on femtosecond laser fabrication: fabrication of bio-microchips", *IEEE Photonics Journal* 2, 253-255 (2010).

6. Y. Kawano, "Scanning Electrometer: Mapping of Electric Potential and Its Fluctuation", Japanese Journal of Applied Physics **49**, 08LA02-1-8 (2010). (Review paper) (Selected for SPOTLIGHTS: Editors' Choice)
7. Y. Kawano, "Highly Sensitive Detector for On-Chip Near-Field THz imaging", IEEE Journal of Selected Topics in Quantum Electronics **17**, 67-78 (2011). (Invited paper)
8. T. Kanai, E. J. Takahashi, Y. Nabekawa and K. Midorikawa: "High harmonic generation in mixed gases and its application to attosecond physics", Kogaku **40**, 136 (2011).
9. 杉岡幸次, "2.7 レーザ加工分野の市場動向: 2.7.1 はじめに", 光産業の動向 ((財)光産業技術振興協会編) p.176-179 (2010).
10. 杉岡幸次: "2.7 レーザ加工分野の市場動向: 2.7.3 おわりに", 光産業の動向 ((財)光産業技術振興協会編) p.200 (2010).
11. 杉岡幸次, 小関泰之, 細川陽一郎, 西山宏昭, 片山聖二, 川人洋介: "LAMP2009 参加報告", レーザ加工学会誌 **17**, 51-64 (2010).
12. 杉岡幸次, 花田修賢, 河野弘幸, 石川依久子: "ナノ水族館-微生物の未知なる動態の解明", 応用物理 **80**, 137-140 (2011).
13. 河野行雄, 石橋幸治, "カーボンナノチューブ量子ドットによる超高感度 THz 波センサ", 応用物理, 第 80 巻, 第 3 号 226-230 (2011).
14. 石橋幸治 (分担執筆) "量子ドットデバイス", 知識ベース, 知識の森 (電子通信学会, 2011)
15. 青柳克信, 石橋幸治, 高柳英明, 中ノ勇人, 平山祥郎 共著「基礎からわかるナノデバイス」(コロナ社 2011 年)
16. 国村伸祐: 全反射蛍光 X 線分析法の発展, X 線分析の進歩 **42**, 59-74 (2011).
17. 金井恒人, 高橋栄治, 鍋川康夫, 緑川克美 「混合ガス中の高次高調波発生とそのアト秒物理学への応用」, 光学 **40** 巻 第 3 号, 136-141 (2011).
18. E. J. Takahashi and K. Midorikawa: "Generation of XUV to soft x-ray radiation by high-order harmonics and its application.", Rev. Laser Eng., vol.38, no.12, pp.937-943 2010 (in Japanese).
19. 磯部圭佑, 須田亮, 緑川克美, "超広帯域パルスの非線形光学顕微鏡への応用", レーザー協会誌, **36**, 20 (2011).

Invited Talk

1. Y. Kawano: "Terahertz characterization of graphene and its application to an ultra-wide band tunable detector", 9th Metamaterials & Nanophotonics Symposium, Wako, Japan, Mar.(2011).
2. Y. Furukawa, Y. Nabekawa, T. Okino, K. Yamanouchi, and K. Midorikawa: "Nonlinear Fourier-transform spectroscopy of hydrogen molecules using high-order harmonic radiation", 4th Asian Workshop on Generation and Application of Coherent XUV and X-ray Radiation, Pohang, Korea, Jan. (2011).
3. Y. Kawano (**Keynote**): "A Wide-Band Frequency-Tunable Terahertz Detector Using a Graphene Device", 2nd International Workshop on THz-Bio, Seoul, Korea, Jan. (2011).
4. S. Moriyama, D. Tsuya, E. Watanabe, S. Uji, M. Shimizu, and K. Ishibashi: "Quantum dots and nanostructures in graphene", ISNTT2011, International Symposium on Nanoscale Transport and Technology, Kanagawa, Japan, Jan.(2011).
5. T. Sato, T. Togashi, E. J. Takahashi, K. Midorikawa, M. Aoyama, K. Yamakawa, A. Iwasaki, S. Owada, T. Okino, K. Yamanouchi, F. Kannari, A. Yagishita, H. Nakano, M.-E. Couprie, K. Fukami, T. Hatsui, T. Hara, T. Kameshima, H. Kitamura, N. Kumagai, S. Matsubara, M. Nagasono, H. Ohashi, T. Ohshima, Y. Otake, T. Shintake, K. Tamasaku, H. Tanaka, T. Tanaka, K. Togawa, H. Tomizawa, T. Watanabe, M. Yabashi, and T. Ishikawa: "Intense extreme ultraviolet light source based on single pass free electron laser seeded by high-order harmonic generation of Ti:Sapphire laser", The 4th Asian Workshop on Generation and Applications of Coherent XUV and X-ray Radiation, Pohang, Korea, Jan. (2011).
6. K. Midorikawa: "Attosecond nonlinear Fourier transform spectroscopy in the XUV region", International symposium on Ultrafast Intense Laser Science 9, Lahania, Hawaii, USA, Dec. (2010).
7. Y. Kawano: "Highly sensitive terahertz sensing and imaging devices with nano-structured semiconductors and carbon materials", 3rd Korea-Japan Workshop on Terahertz Technology, Busan, Korea, Dec. (2010).
8. K. Midorikawa: "Recent progress on intense high harmonic generation and its application at RIKEN", International Symposium on Chirped Pulse Amplification, Quebec City, Canada, Nov. (2010).
9. K. Midorikawa: "Recent progress on high harmonic generation and attosecond science at RIKEN", Photonics and OptElectronic Meeting 2010, Wuhan, China, Nov. (2010).
10. H. Ohmori: "Nanoprecision Ultra Fabrication Technologies for Micro-Structural Optics and On-Demand Fabrication System", 2nd Seminar on Nano-Mirror Ultraprecision Machining Technology, Gwanju, Korea, Nov. (2010).

11. K. Midorikawa: "Attosecond nonlinear Fourier transform spectroscopy", 6th Asian Symposium on Intense Laser Science, Beijing, China, Oct. (2010).
12. Y. Kawano: "Terahertz-wave sensing and imaging based on nanostructured electronic devices", 1st Annual World Congress of Nanomedicine (Nanomedicine 2010), Beijing, China, Oct. (2010).
13. S. Nakashima, K. Sugioka, T. Ito, H. Takai, and K. Midorikawa: "Fabrication of periodic nano-hole array on GaN surface by fs laser for improvement of extraction efficiency in blue LED", 6th Int. Conf. on Laser Assisted Netshape Engineering (LANE 2010), Erlangen, Germany, Sept. (2010).
14. K. Sugioka, Y. Hanada, H. Kawano, I. S. Ishikawa, A. Miyawaki, and K. Midorikawa: "Nanoaquarium integrated with functional microcomponents for study on Phormidium assemblage", 29th Int. Cong. on Applications of Lasers & Electro-Optics (ICALEO 2010), Anaheim, USA, Sept. (2010).
15. K. Ishibashi, A. Hida, S. Moriyama, T. Fuse and T. Yamaguchi (Keynote Lecture), "Carbon nanotubes and graphenes for building blocks of nanodevices", 11th Edition of the "Trends in NanoTechnology" International Conference (TNT2010), Braga, Portugal, Sept. (2010).
16. K. Ishibashi, A. Hida, S.Y. Huang and T. Nishio: "Carbon nanotubes and semiconductor nanowires for building blocks of quantum nanodevices", McGill-RIKEN Joint Workshop on Nanotechnology and Green Chemistry, Mont Tremblant, Quebec, Canada, Sept. (2010).
17. H. Ohmori; "Nanoprecision Micro-mechanical Fabrication based on ELID-technologies", Nanoprecision Micro-mechanical Fabrication Conference, Taipei, Taiwan, Sep. (2010).
18. H. Ohmori: "Ultra-fabrication Technologies for Sustainable Manufacturing", 2010 International Joint Workshop on Advanced Micro Fabrication (2010 IJWAMF), Kaohsiung, Taiwan, Sept. (2010).
19. S. Kunimura: "Handheld total reflection X-ray fluorescence spectrometer with picogram detection limits", China 2010 XRS Conference, Shanghai, China, Sept. (2010).
20. E.J. Takahashi, P. Lan, and K. Midorikawa: "Infrared Two-Color Multicycle Laser Field Synthesis for Generating an Intense Attosecond Pulse", The 2010 International Symposium on Ultra-fast Phenomena and Terahertz Waves (ISUPTW 2010), Xian, China, Sept. (2010).
21. K. Midorikawa: "Attosecond Nonlinear Optics", 18th International Symposium on Gas Flow and Chemical Lasers and High Power Lasers (GCL-HPL 2010), Sofia, Bulgaria, Aug.-Sept. (2010).
22. T. Kanai, A. Suda and K. Midorikawa: "Nonlinear wavelength conversion of high order harmonics", International Conference on Coherent and Nonlinear Optics (ICONO 2010)/International Conference on Lasers, Applications, and Technologies (LAT 2010), Kazan, Russia, Aug. (2010).
23. K. Midorikawa, E. J. Takahashi, P. Lan, and Y. Nabekawa: "High harmonic generation by high energy OPA source", 17th International Conference on Ultrafast Phenomena, Snowmass Village, USA, July (2010).
24. K. Sugioka: "Ultrafast laser micro and nano processing - fundamentals to applications", 2nd Int. School on Laser-surface interactions for new materials production: tailoring structure and properties, Venice, Italy, July (2010). Tutorial
25. S. Nakashima, K. Sugioka, K. Midorikawa: "Nanofabrication of GaN by ultrafast laser", International Conference Fundamentals of Laser Assisted Micro- & Nanotechnologies (FLAMN-10), Sankt-Peterburg, Russia, July (2010).
26. H. Ohmori: "Ultra Fabrication Technologies for Sustainable Development of Advanced Devices and Components", 9th International Conference on Frontiers of Design and Manufacturing, Changsha, China, July (2010).
27. K. Midorikawa: "Nonlinear Fourier transform spectroscopy using an attosecond pulse train", Gordon Research Conference: Multiphoton Processes, Tilton, NH, USA, June (2010).
28. K. Sugioka, S. Nakashima, and K. Midorikawa: "Nanofabrication of GaN by ultrafast laser", 2010 Int. Conf. on Fundamentals of Laser Assisted Micro- and Nanotechnologies (FLAMN-10), St. Petersburg, Russia, June (2010).
29. K. Ishibashi, A. Hida, S. Y. Huang, T. Nishio: "Carbon nanotubes and semiconductor nanowires for building blocks of quantum nanodevices", International Workshop on Physics of Micro and Nano Scale Systems, Ystad, Sweden, June (2010).
30. K. Ishibashi and A. Hida: "Carbon nanotube quantum dots and their molecular scale nanostructures", The 37th International Symposium on Compound Semiconductors (ISCS2010), Takamatsu, Japan, May -June (2010).
31. H. Ohmori: "Unique and Unusual Application of Ultraprecision ELID Grinding and Diamond Cutting", International Optical Design Conference/Optical Fabrication and Testing, Jackson Hole, USA, June (2010).
32. K. Midorikawa: "Infrared two-color multicycle laser field synthesis for intense attosecond pulse generation", 7th Asian-Pacific Laser Symposium (APLS 2010), Jeju, Korea, May (2010).
33. K. Midorikawa: "Intense high harmonics generation and its application at RIKEN", 12th International

Conference on X-Ray Lasers, Gwangju, Korea, May-June (2010).

34. K. Isobe, A. Suda, H. Hashimoto, F. Kannari, H. Kawano, H. Mizuno, A. Miyawaki, and K. Midorikawa: "High-resolution microscopy based on cyclic sequential multiphoton excitation," The 2nd Shanghai Tokyo Advanced Research Symposium on Ultrafast Intense Laser Science, Xiamen, China, May (2010).
35. Y. Kawano: "Terahertz sensing, imaging, and applications", 2010 CMOS Emerging Technologies Workshop, Whistler, BC, Canada, May (2010).
36. Y. Kawano: "On-chip terahertz-wave imaging for medical care", 1st Annual World Congress of Immunodiseases and Therapy (WCIT 2010), Beijing, China, May (2010).
37. K. Midorikawa: "Attosecond Nonlinear Optics", International High-Power Laser Ablation Conference, Santa Fe, USA, Apr. (2010).
38. K. Sugioka, Y. Hanada, H. Kawano, I. S. Ishikawa, A. Miyawaki, and K. Midorikawa: "Nanoaquariums fabricated by femtosecond laser for exploration of dynamics and functions of microorganisms", 2010 Int. Conf. on High-Power Laser Ablation (HPLA 2010), Santa Fe, USA, Apr. (2010).
39. 緑川克美: " " 高次高調波による XUV 光科学の進展 "、レーザー学会学術講演会第 31 回年次大会、1 月、調布 (2011).
40. 河野行雄: " 半導体・ナノカーボンによるテラヘルツ波センシング・イメージング "、テラヘルツテクノロジーフォーラム・平成 22 年度・第 2 回技術検討会、1 月、和光 (2011).
41. 河野行雄: " 半導体・カーボン材料による量子ナノデバイスを用いたテラヘルツ波センシング・イメージング "、レーザー学会・年次大会、1 月、調布 (2011).
42. 河野行雄: " ナノデバイス工学分野におけるテラヘルツイメージングの研究 "、第 4 回テラヘルツ・電磁波応用研究会、12 月、長野 (2010).
43. 緑川克美: " 私の研究 "、さきがけ「光の創成・操作と展開」平成 22 年度第 2 回領域会議、11 月、つくば (2010).
44. 河野行雄: " 高機能テラヘルツ電磁波計測の開拓とメゾ・ナノ系量子伝導研究への応用 "、極限コヒーレント光科学研究会、11 月、東京 (2010).
45. 磯部圭佑: " " 非線形光学顕微鏡の基礎と最新技術 " 第 8 回先端光量子科学アライアンスセミナー、10 月、和光 (2010).
46. 緑川克美: " アト秒レーザー: 光科学の新たな地平 "、第 71 回応用物理学会学術講演会、9 月、長崎 (2010).
47. 緑川克美: " 高次高調波とアト秒科学 "、第 71 回応用物理学会学術講演会、9 月、長崎 (2010).
48. 杉岡幸次、緑川克美、Ya Cheng、Zhizhan Xu: " " 時空間ビーム整形によるフェムト秒レーザーガラス内部 3 次元加工 "、平成 22 年電気学会電子・情報システム部門大会、9 月、熊本 (2010).
49. 杉岡幸次: " レーザ加工分野の最新動向 "、光産業技術振興協会光産業動向セミナー、9 月、東京 (2010).
50. 緑川克美: " 高次高調波とアト秒科学 "、第 55 回物性夏の学校、8 月、愛知 (2010).
51. 杉岡幸次: " " ビーム整形によるマイクロ・ナノ加工 "、光産業技術振興協会平成 22 年度第 2 回多元技術融合光プロセス研究会、8 月、東京 (2010).
52. 河野行雄: " 半導体・ナノカーボンデバイスによるテラヘルツ近接場顕微イメージングと応用 "、" テラヘルツ分光計測とイメージング " 研究討論会、8 月、福井 (2010).
53. 石橋幸治: " カーボンナノチューブ・半導体ナノワイヤを用いた量子ナノデバイス "、第 4 回 稲盛フロンティア研究講演会『ナノエレクトロニクス・デバイスの新潮流』、6 月、福岡 (2010).
54. 杉岡幸次、緑川克美、花田修賢、石川依久子、河野弘幸、宮脇 敦史: " フェムト秒レーザーによるナノ水族館作製と微生物動態分析への応用 "、第 73 回レーザー加工学会講演会、5 月、大阪 (2010).
55. 河野行雄: " 半導体・ナノカーボンデバイスを用いた高感度・高分解能テラヘルツイメージング "、日本学術振興会・「テラヘルツ波科学技術と産業開拓」第 182 委員会・第 6 回研究会、4 月、東京 (2010).

Patents

1. 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 "、特願 2011-061333、3 月 18 日

Conferences

1. K. Midorikawa (Co-Chair): JSPS Asian CORE Workshop on Next Generation Ultra-Short Pulse Lasers for High Field and Ultrafast Science, Wako, Japan, Mar. 2-4 (2011).
2. K. Midorikawa (Chair): 4th Workshop on Generation and Applications of Coherent XUV and X-ray Radiation, Pohang, Korea, Jan. 20-21 (2011).
3. K. Sugioka (Chair): 11th International Symposium on Laser Precision Microfabrication (LPM 2010),

Stuttgart, Germany, June 7-10 (2010).

Awards

1. K. Katahira, Senior research scientist, "The Young Scientists' Prize", The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology, 2010.
2. 磯部圭佑：“研究奨励賞”、(独)理化学研究所 2011年3月10日。
3. 磯部圭佑：“基礎科学特別研究員研究成果発表会ポスター賞”、(独)理化学研究所 2011年1月14日。
4. 緑川克美：“Fellow of American Physical Society”，2010年12月。
5. 緑川克美：“応用物理学会フェロー表彰”、社団法人応用物理学会、2010年9月14日。
6. 緑川克美：“応用物理学会論文賞”、社団法人応用物理学会、2010年9月14日
7. 緑川克美：“レーザー発明五十周年記念 泰山賞 レーザー進歩賞”、財団法人レーザー技術総合研究所、2010年7月13日
8. 須田亮：“レーザー学会論文賞(解説部門)”、社団法人レーザー学会、2010年5月31日
9. 高橋栄治：“大阪大学近藤賞論文賞”，大阪大学，2010年4月27日
10. 高橋栄治：“文部科学大臣表彰若手科学者賞”，文部科学省，2010年4月13日

News, Media

1. Laser Insights (Laser Institute of America), "Femtosecond laser 3D micromachining for fabricating nanoaquariums: exploring the functions of aquatic microorganisms", 2011年2月 (<https://www.lia.org/laserinsights/2011/02/25/femtosecond-laser-3d-micromachining-for-fabricating-nanoaquariums-exploring-the-functions-of-aquatic-microorganisms/#more-635>).
2. サイエンスチャンネル(テレビ番組)「眠れる少女が見た夢～クイズで知ろう!最新科学～(11) 夢・その11 「電波と光の間にあるものは?」(河野 行雄 監修) 2010年6月27日放映
3. Asia Research News 2010, "Sensitive hybrid", 2010年4月