

チーム名： RIKEN-SIOM Joint Research Unit

(1) 原著論文(accept)を含む / Original Papers

1. J. Xu, D. Wu, J. Y. Ip, K. Midorikawa, and K. Sugioka, “Vertical sidewall electrodes monolithically integrated into 3D glass microfluidic chips using water-assisted femtosecond-laser fabrication for in situ control of electrotaxis”, *RSC Adv.* **5**, 24072–24080 (2015).
2. Y. Liao, J. Ni, L. Qiao, M. Huang, Y. Bellouard, K. Sugioka, and Y. Cheng, “High-fidelity visualization of formation of volume nanogratings in porous glass by femtosecond laser irradiation”, *Optica* **2**, 329–334 (2015).
3. N. Ishikawa, Y. Hanada, I. Ishikawa, K. Sugioka, and K. Midorikawa, “Femtosecond laser-fabricated biochip for studying symbiosis between *Phormidium* and seedling root”, *Appl. Phys.* **B119**, 503–508 (2015).
4. Y. Liao, W. J. Pan, Y. Cui, L. L. Qiao, Y. Bellouard, K. Sugioka, and Y. Cheng, “Formation of in-volume nanogratings with sub-100-nm periods in glass by femtosecond laser irradiation”, *Opt. Lett.* **40**, 3623–3626 (2015).
5. K. Umemura, Y. Sadoya, K. Nagao, R. Oikawa, Y. Hanada, K. Sugioka, and S. Mayama, “Single cell analysis using a glass microchamber for studying movement fluctuations of *Navicula pavillardii* and *Seminavis robusta* diatom cells”, *Micron* **77**, 41–43 (2015).
6. B. Xu, W. Du, J. Li, Y. Hu, L. Yang, C. Zhang, G. Li, Z. Lao, J. Ni, J. Chu, D. Wu, S. Liu, and K. Sugioka, “High efficiency integration of three-dimensional functional microdevices inside a microfluidic chip by using femtosecond laser multifoci parallel microfabrication”, *Sci. Rep.* **6**, 19989 (2016).
7. Z. Wang, Y. Liao, P. Wang, J. Qi, L. Qiao, K. Sugioka, and Y. Cheng, “Formation of in-volume nanogratings in glass induced by spatiotemporally focused femtosecond laser pulses”, *Adv. Opt. Technol.* (in press).

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

1. K. Sugioka, “Progress in ultrafast laser processing and future prospects”, *Nanophotonics*. (in press)
2. 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”, 平成 26 年度光産業技術に関する報告書 ((財) 光産業技術振興協会編) p.205–209 (2015).
3. 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”, 平成 26 年度光産業技術に関する報告書 ((財) 光産業技術振興協会編) p.234–235 (2015).
4. 杉岡幸次, ” 超短パルスレーザー微細加工技術の動向と展望 “, *精密工学会誌*, **81**, 709–713 (2015).
5. 杉岡幸次, ” 超短パルスレーザー加工の実用化技術”, *電気学会論文誌 C*, **135**,

1037–1042 (2015).

(3) 招待講演 / Invited Talks

1. K. Sugioka, J. Xu, F. Sima, D. Wu, and K. Midorikawa, “Manufacture of 3D functional biochips by hybrid additive and subtractive femtosecond laser processing”, 3rd Int. Academy of Photon. and Laser Engin. (IAPLE) Conference, Honolulu, USA, Aug. (2015). Keynote talk
2. K. Sugioka, J. Xu, F. Sima, D. Wu, and K. Midorikawa, “Hybrid femtosecond subtractive and additive 3D manufacturing for biochip fabrication”, Conf. on Lasers and Electro-Optics (CLEO 2015), San Jose, USA, May (2015).
3. K. Sugioka, S. Wu, and K. Midorikawa, “Hybrid subtractive and additive micromanufacturing using femtosecond laser for fabrication of true 3D biochips”, SPIE/SIOM Pacific Rim Laser Damage Conference 2015 (PLD 2015), Shanghai, China, May (2015).
4. J. Xu, K. Midorikawa, and K. Sugioka, “Flexible manipulation of biological cells in microscale space using electrofluidics fabricated by femtosecond laser”, The 6th Shanghai–Tokyo Advanced Research Symposium on Ultrafast Intense Laser Science (STAR6), Hangzhou, China, May (2015).
5. K. Sugioka, J. Xu, F. Sima, D. Wu, and K. Midorikawa, “Ship-in-a-bottle fabrication of functional biochips by hybrid femtosecond laser processing”, Conf. on Lasers and Electro-Optics Europe (CLEO/Europe 2015), Munich, Germany, June (2015).
6. K. Sugioka, K. Midorikawa, F. He, and Y. Cheng, “High performance materials processing using tailored femtosecond laser pulses”, 11th Pacific Rim Conf. on Lasers and Electro-Optics (CLEO/Pacific Rim 2015), Busan, Korea, Aug. (2015).
7. K. Sugioka, J. Xu, F. Sima, D. Wu, and K. Midorikawa, “Hybrid femtosecond laser 3D microprocessing consisting of subtractive and additive manufacturing”, 23rd Int. Conf. on Advanced Laser Technology (ALT’ 15), Faro, Portugal, Sept. (2015).
8. K. Sugioka, J. Xu, and K. Midorikawa, “Nanoaquarium: manipulation of bio-cells in electrofluidics fabricated by hybrid femtosecond laser processing”, 24th Int. Cong. on Applications of Lasers & Electro-Optics (ICALEO 2015), Atlanta, USA, Oct. (2015).
9. F. He, J. Yu, W. Chu, Z. Wang, Y. Tan, Y. Cheng, and K. Sugioka, “Tailored femtosecond Bessel beams for high-throughput, taper-free through-silicon vias (TSVs) fabrication”, SPIE Int. Sypm. on Laser Applications in Microelectronic and Optoelectronic Manufacturing XXI (LAMOM XXI), San

Francisco, USA, Feb. (2016).

10. 杉岡幸次, “レーザ加工分野の最新動向”, 平成27年光産業技術振興協会光産業動向セミナー、10月、横浜 (2015) .
11. 杉岡幸次, “超短パルスレーザ加工の基礎と応用: 精密微細加工、ナノ加工、3次元加工、高品位接合、産業応用”, 日本テクノセンターセミナー、10月、東京 (2015).
12. 杉岡幸次, F. Sima, J. Xu, D. Wu, 緑川 克美, “除去/付加複合フェムト秒レーザー3次元加工技術とバイオチップ作製への応用”, サイエンスアゴラ 2015 「ヨーロッパタイトステージ」、11月、東京 (2015).

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

1. 7th Int. Congress on Laser Advanced Materials Processing (LAMP2015), Kitakyushu, Japan, 26-29 May (2015).
2. SPIE Photonics West LASE 2016, San Francisco, USA, 13 -18 Feb. (2016).

(5) 特許出願 / Patent Applications

1. 杉岡幸次: ” レーザービーム整形装置および除去加工装置”、特願 2016-024150
平成 28 年 2 月 10 日.