

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

1. D. Wu, S. Wu, J. Xu, L. Niu, K. Midorikawa, and K. Sugioka, "Hybrid femtosecond laser microfabrication to achieve true 3D glass/polymer composite biochips with multiscale features and high performance: the concept of ship-in-a-bottle biochip", *Laser Photon. Rev.* **8**, 458–467 (2014).
2. F. He, B. Zeng, W. Chu, J. Ni, K. Sugioka, Y. Cheng, and C. G. Durfee. "Characterization and control of peak intensity distribution at the focus of a spatiotemporally focused femtosecond laser beam", *Opt. Express* **22**, 9734–9748 (2014).
3. M. Füle, J. Budai, Z. Szkiva, K. Sugioka, and L. Nanai, "Self repeating surface morphology on ultrashort laser pulse-treated vanadium surface", *J. Laser Micro/Nanoengin.* **9**, 46–51 (2014).
4. J. Song, J. Lin, J. Tang, Y. Liao, F. He, Z. Wang, L. Qiao, K. Sugioka, and Ya Cheng, "Fabrication of an integrated high-quality-factor (high-Q) optofluidic sensor by femtosecond laser micromachining", *Opt. Express* **22**, 14792–14802 (2014).
5. S. Nakashima, K. Sugioka, Katsumi Midorikawa, and Kohki Mukai, "Plasmonically coupled Faraday effect in Fe- and Au-doped silicate glasses irradiated with femtosecond laser", *J. Laser Micro/Nanoengin.* **9**, 132–136 (2014).
6. D. Wu, J. Xu, L. Niu, S. Wu, K. Midorikawa, and K. Sugioka, "In-channel integration of designable microoptical devices using flat scaffold-supported femtosecond-laser microfabrication for coupling-free optofluidic cell counting", *Light Sci. Appl.* **4**, e228 (2015).
7. D. Wu, L. G. Niu, S. Z. Wu, J. Xu, K. Midorikawa, and K. Sugioka, "Ship-in-a-bottle femtosecond laser integration of optofluidic microlens arrays with center-pass units enabling coupling-free parallel cell counting with 100% success rate," *Lab Chip* **15**, 1515–1523 (2015).
8. 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).
9. 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).

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

1. K. Sugioka, "Ultrafast laser micro- and nano-processing of glasses", P. Ossi (Ed.), *Lasers in Materials Science*, (Springer, Berlin) p. 359-380 (2014). K. Sugioka and Y. Cheng, "Ultrafast lasers - reliable tools for advanced materials processing", *Light: Sci. & Appl.* **3**, e149 (2014).
2. K. Sugioka, J. Xu, D. Wu, Y. Hanada, Z. Wang, Y. Cheng, and K. Midorikawa, "Femtosecond laser 3D micromachining: a powerful tool for the fabrication of microfluidic, optofluidic, and electrofluidic devices based on glass", *Lab. Chip.* **14**, 3447-3458 (2014).
3. F. He, Y. Liao, J. Lin, J. Song, L. Qiao, Y. Cheng, and Koji Sugioka, "Femtosecond laser fabrication of monolithically integrated microfluidic sensors in glass", *Sensors* **14**, 19402-19440 (2014).
4. K. Sugioka and Y. Cheng, "Femtosecond laser three-dimensional micro- and nanofabrication", *Appl. Phys. Rev.* **1**, 041303 (2014).
5. 杉岡幸次, "レーザプロセッシング", *光学技術の辞典* (朝倉書店、東京、2014) 91-93.
6. 杉岡幸次, "超短パルスレーザによる精密・微細加工技術", *機械技術* **62**, 41-44 (2014).
7. 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.199-205 (2014).
8. 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.228-229 (2014).
9. 花田修賢, 杉岡幸次, "超短パルスレーザを用いた水棲生物観察用バイオチップ", *レーザー加工学会誌*, **21**, 6-10 (2014).
10. 杉岡幸次, "レーザ加工分野の最近の動向=超短パルスレーザ三次元加工=", *光アライアンス*, **25**, 38-42 (2014).
11. 杉岡幸次, "超短パルスレーザプロセッシング-基礎から最近の進展ならびに産業応用まで-", *OITDA オプトニューズ*, **Vol. 9**, p.48-53 (2014).

### (3) 招待講演 / Invited Talks

1. K. Sugioka, "The state of the art in ultrafast laser processing", *Laser World of Photonics China 2015, 10th International Laser Processing and Systems Conference (LPC 2015)*, Shanghai, China, March (2014). Plenary talk
2. K. Sugioka, J. Xu, D. Wu, and K. Midorikawa, "Femtosecond laser 3D micromachining: reliable tool for fabrication of highly functional biochips", *23rd General Meeting of the International Commission for Optics (ICO-23)*, Santiago de Compostela, Spain, Aug. (2014). Keynote talk
3. K. Sugioka, "Ultrafast laser micro and nano processing - From fundamentals to industrial applications", *4th Int. School on Lasers in Materials*

Science (SLIMS 2014), Venice, Italy, July (2014). Tutorial

4. K. Sugioka, S. Wu, and K. Midorikawa, "Double-pulsed ultrashort laser welding of glasses toward multifold enhancement of process efficiency", 1st Smart Laser Processing Conf. (SLPC 14), Yokohama, Japan, April (2014).
5. K. Sugioka, J. Xu, D. Wu, and K. Midorikawa, "Ship-in-a-bottle biochips fabricated by hybrid femtosecond laser processing", The 5th Shanghai-Tokyo Advanced Research Symposium on Ultrafast Intense Laser Science (STAR5), Miyazaki, Japan (2014).
6. K. Sugioka, F. He, and Y. Cheng, "High aspect ratio, taper-free through Si vias fabricated by femtosecond laser Bessel beam", 1<sup>st</sup> Japan-France Workshop on Heterogeneous Integration and its Application by Three Dimensional Structures, Tokyo, Japan, June (2014).
7. Y. Hanada and K. Sugioka, "Cell observation in functional biochips fabricated by femtosecond laser direct writing", The IUMRS International Conference in Asia 2014 IUMRS-ICA, Fukuoka, Japan, Aug. (2014).
8. Y. Cheng, Y. Liao, and K. Sugioka, "Sub-50 nm ablation inside a mesoporous glass immersed in liquid with femtosecond laser pulses: Mechanism and applications", The 9th International Conference on Photo-Excited Processes and Applications (ICPEPA-9), Matsue, Japan, Sept.-Oct. (2014).
9. J. Xu, K. Midorikawa, and K. Sugioka, "Electrofluidics fabricated by femtosecond laser direct writing", 22nd Int. Conf. on Advanced Laser Technology (ALT' 14), Cassis, France, Oct. (2014).
10. K. Sugioka, D. Wu, J. Xu, and K. Midorikawa, "Ship-in-a-bottle integration by hybrid femtosecond laser processing for fabrication of highly functional biochips", 23rd Int. Cong. on Applications of Lasers & Electro-Optics (ICALEO 2014), San Diego, USA, Oct. (2014).
11. K. Sugioka, "Advances in ultrafast laser processing in the last two decades and the future", SPIE Int. Symp. on Laser Applications in Microelectronic and Optoelectronic Manufacturing XX (LAMOM XX), San Francisco, USA, Feb. (2015).
12. F. Sima, D. Wu, J. Xu, K. Midorikawa, K. Sugioka, "Hybrid subtractive and additive femtosecond laser micro-machining for highly functional biochip fabrication", 6th European Conference on Applications of Femtosecond Lasers in Materials Science (FemtoMat 2015), Mauterndorf, Austria, March (2015).
13. 杉岡幸次, "超短パルスレーザープロセッシングの進展と産業応用", 第 371 回光産業技術振興協会マンスリーセミナー, 4月、東京 (2014).
14. 杉岡幸次, "フェムト秒レーザー 3次元微細加工: バイオチップ作製への応

用”，光ものづくりセミナー<レーザーの革新的加工応用について>、5月、京都（2014）。

15. 杉岡幸次，“フェムト秒レーザー3次元加工とバイオチップ作製への応用”，第24回先端光量子科学アライアンスセミナー、9月、和光（2014）。
16. 杉岡幸次，“レーザ加工分野の最新動向”，平成26年光産業技術振興協会光産業動向セミナー、10月、横浜（2014）。
17. 杉岡幸次，“フェムト秒レーザー3次元複合加工技術とバイオチップ作製への応用”，第15回光量子科学研究シンポジウム、11月、奈良（2014）。
18. 杉岡幸次，“フェムト秒レーザー3次元加工技術と高機能バイオチップ作製への応用”，九州大学大学院博士課程リーディングプログラム第60回分子システムデバイスセミナー、12月、福岡（2014）。
19. 花田修賢，石川依久子，杉岡幸次，“細胞の詳細観察を可能にするフェムト秒レーザーを用いたバイオチップ作製”，レーザー学会学術講演会第35回年次大会、1月、東京（2015）。
20. 杉岡幸次，“除去・付加複合フェムト秒レーザー3次元加工”，第62回応用物理学会春期学術講演会シンポジウム「レーザーによる3次元造形技術の最先端から実用まで」、3月、平塚（2015）。

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

1. Extreme Photonics Seminar, “Controlled growth of ZnO nano/micro-crystals and their applications as building blocks for light emitting devices”, Tatsuo Okada, Wako, 9 April (2014).
2. The 15<sup>th</sup> International Symposium on Laser Precision Microfabrication (LPM 2014), Vilnius, Lithuania, 17-20 June (2014).
3. 9<sup>th</sup> International Conference on Photo-Excited Processes and Applications (ICPEPA-9), Matsue, Japan, 29 September - 3 October (2014).

(5) 特許出願 / Patent Applications

1. 杉岡幸次：“フェムト秒ベッセルビームによるSi貫通ビアの形成方法”、特願2014-113554、2014年5月30日。

(6) 特筆すべき事項・トピックス（雑誌表紙などの掲載記事） / Topics

1. 化学工業日報，“バイオチップ内に3次元構造素子 - フェムト秒レーザーで”，2015年1月21日。
2. 科学新聞，“フェムト秒レーザー加工技術開発 - バイオチップ内部に三次元微細構造を付与”，2015年1月30日。
3. K. Sugioka and Y. Cheng, “Fabrication of 3D microfluidic structures inside glass by femtosecond laser micromachining”, Advances in

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(<http://advanceseng.com/applied-physics/fabrication-3d-microfluidic-structures-inside-glass-femtosecond-laser-micromachining/>) (2014).

4. K. Sugioka, “Hybrid femtosecond laser 3D microfabrication: reliable tool for fabrication of functional biochips” , LIA Today, 2015Jan/Feb. p. 10–12 (<http://content.yudu.com/Library/A3fnv8/LIATODAYJanuaryFebru/resources/10.htm>) (2015).