先端レーザー加工研究チーム ／ Advanced Laser Processing Research Team

（1） 原著論文（accept）を含む ／ Original Papers

1. Bai, S., Ren, X., Obata, K., Ito, Y., and Sugioka, K.: “Label-Free Trace Detection of Bio-Molecules by Liquid Interface Assisted Surface-Enhanced Raman Scattering Using Microfluidic Chip”, Opto-Electron. Adv. (in press).
2. Bai, S., Hu, A., Hu, Y., Ma, Y., Obata, K., and Sugioka, K.: “Plasmonic Superstructure Arrays Fabricated by Laser Near-Field Reduction for Wide-Range SERS Analysis of Fluorescent Materials”, Nanomaterials 12, 970 (2022).
3. Caballero-Lucas, F., Obata, K., and Sugioka, K.: “Enhanced ablation efficiency for silicon by femtosecond laser microprocessing with GHz bursts in MHz bursts (BiBurst)”, Int. J. Extrem. Manuf. 4, 015103 (2022).
4. Zhang, D., Li, X., Fu, Y., Yao, Q., Li, Z., and Sugioka, K.: “Liquid vortexes and flows induced by femtosecond laser ablation in liquid governing formation of circular and crisscross LIPSS”, Opto-Electron. Adv. 5, 210066 (2022).
5. Suzuki, D., Serien, D., Obata, K., Sugioka, K., Narazaki, A., and Terasaki, N.: “Improvement in laser-based micro-processing of carbon nanotube film devices”, Appl. Phys. Express 15, 026503 (2022).
6. Wang, H., Ji, K., Wang, Y., Liu, Z., Gao, Y., Shen, Y., Bai, S., Sugioka, K., and Qi, X.: “Anti-parity-time topologically undefined state”, New J. Phys. 23, 123039 (2021).
7. Ma, Y., Tao, L., Bai, S., and Hu, A.: “Green Synthesis of Ag Nanoparticles for Plasmon-Assisted Photocatalytic Degradation of Methylene Blue”, Catalysts 11, 1499 (2021).
8. Sugiyama, H., Tsunemitsu, K., Onoe, H., Obata, K., Sugioka, K., and Terakawa, M.: “Microfabrication of cellulose nanofiber-reinforced hydrogel by multiphoton polymerization”, Sci. Rep. 11, 10892 (2021).
9. Lu, G., Wang, L., Li, H., Ji, Z., Wang, Q., Pei, X., and Sugioka, K.: “Methods for the suppression of "residual stress holes" in laser shock treatment”, Mater. Today Commun. 28, 102486 (2021).
10. Lu, G., Li, J., Ji, Z., Li, H., Yao, C., Li, J., Sugioka, K., and Zhao, G.: “How does the pulsed laser turn into ‘force’?”, Measurement 185, 110016 (2021).
11. Zhang, C., Hanchang, Y., Wang, C., Zhang, J., Zhao, L., Zhang, H., Zhu, W., Zhai, H., Wu, D., and Sugioka, K.: “Real-time capture of single particles in controlled flow by a rapidly generated foci array with adjustable intensity and pattern”, Opt. Lett. 46, 5308 (2021).

12. Wang, C., Hu, Z., Yang, L., Zhang, C., Zhang, L., Ji, S., Xu, L., Li, J., Hu, Y., Wu, D., Chu, J., and Sugioka, K.: “Magnetically driven rotary microfilter fabricated by two-photon polymerization for multimode filtering of particles”, Opt. Lett. 46, 2968 (2021).
13. Obata, K., Caballero-Lucas, F., and Sugioka, K.: “Material processing at GHz burst mode by femtosecond laser ablation”, J. Laser Micro/Nanoengin. 16, 19 (2021).

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

1. Zhnag J., Sugioka, K., “Basics and Applications of Optical Interferometers Integrated by Femtosecond Laser”, Appl. Res. (2022). (in press)
2. Sugioka, K., “Sugioka, K. (Ed.), Handbook of Laser Micro- and Nano-Engineering”, Vol. 1 - Vol. 3, (Springer, Berlin), (2021).
3. Xu, J., Cheng, Y., Sugioka, K., “Optics for beam shaping in laser processing”, Sugioka, K. (Ed.), Handbook of Laser Micro- and Nano-Engineering Vol. 1, (Springer, Berlin) p.495-494 (2021).
4. Xu, J., Cheng, Y., Sugioka, K., “Basic optics and diagnostics apparatus for ultrashort pulse laser micro/nanoprocessing”, Sugioka, K. (Ed.), Handbook of Laser Micro- and Nano-Engineering Vol. 1, (Springer, Berlin) p.671-684 (2021).
5. Serien, D., Sugioka, K., “Laser printing of biomaterials”, Sugioka, K. (Ed.), Handbook of Laser Micro- and Nano-Engineering Vol. 3, (Springer, Berlin) p.1767-1798 (2021).
6. Sugioka, K., “Will GHz burst mode create a new path to femtosecond laser processing?”, Int. J. Extrem. Manuf. 3, 043001 (2021).
7. Zhang, D., Zhuguo, L., Sugioka, K., “Laser ablation in liquids for nanomaterial synthesis: diversities of targets and liquids”, J. Phys. Photonics 3, 042002 (2021).
8. Bai, S., Sugioka, K., “Recent Advances in the fabrication of highly sensitive surface-enhanced Raman scattering substrates: Nanomolar to attomolar level sensing”, Light Adv. Manuf. 2, 13 (2021).
9. Sima, F., Sugioka, K., “Ultrafast laser manufacturing of nanofluidic systems”, Nanophotonics 10, p.2389–2406 (2021).
10. 杉岡幸次, “ フェムト秒レーザープロセシングの最近の進展”, レーザー研究, 50, 117-121 (2022).
11. 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”, 2020 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）,159-163 (2021).
12. 小幡孝太郎, “4.3.1 パルスレーザ加工”, 2020 年度「光技術動向調査報告書」(（財）光産業技術振興協会編）, 214-217 (2021).

（3）招待講演 ／ Invited Talks

1. Sugioka, K., “Advanced laser processing for fabrication of functional micro and nanodevices”, XIOPM-RAP Joint Webinar on Photonics, Online, November (2021).
2. Sugioka, K., Bai, S., “Hybrid femtosecond laser processing for fabrication of microfluidic SERS chip enabling attomolar sensing”, 13th Int. Photonics and OptoElectronics Meetings (POEM 2021), Wuhan, China (Hybrid), November (2021).
3. Sugioka, K., Bai, S., “Metal nanostructuring inside 3D glass microfluidics by hybrid femtosecond laser rocessing for attomolar SERS sensing”, 30th Int. Cong. on Applications of Lasers & Electro-Optics (ICALEO 2021), Web conference, October (2021).
4. Sugioka, K., Bai, S., “3D microfluidic SERS chips fabricated by hybrid femtosecond laser processing for attomolar sensing”, 4th Int. Conf. on Ultrafast Optical Science (UltrafastLight-2021), Moscow, Russia (Hybrid), October (2021). Plenary talk
5. Sugioka, K., Caballero-Lucas, F., Obata, K., “Improvement of Fabrication Resolution in Multi-Photon Polymerization by Using GHz Burst Mode”, 29th International conference on Advanced Laser Technology (ALT 21), Moscow, Russia (Hybrid), September (2021).
6. Sugioka, K., Sima, F., Kawano, H., Miyawaki, A., “Femtosecond laser 3D processing: fabrication of manofluidics for mechanism study of cancer cell metastasis”, 2nd Int. Workshop on Frontiers in Lasers and Applications (FLA-2), Online, July (2021). Keynote talk
7. Sugioka, K., “Advanced femtosecond laser micro and nanoprocessing”, 2nd Int. Summit on Photonics & Laser Technol. (Optics & Lasers 2021), Online, June (2021). Keynote talk
8. Sugioka, K., “Ultrafast laser processing: Recent progress and future perspective”, 6th UKP-Workshop: Ultrafast Laser Technology, Online, April (2021).
9. 杉岡幸次, “ フェムト秒レーザー 3 次元加工と高機能マイクロデバイス作製への応用”, バイオミメティクス加工技術研究会第 6 回インタラクティブシンポジウム, オンライン, 3 月 2 日 (2022).
10. 小幡孝太郎, Francesc Caballero-Lucas, 杉岡幸次, “GHz バーストモードフェムト秒レーザパルスによる材料加工”, 第 96 回レーザ加工学会講演会, オンライン, 1 月 18 日 (2022). 特別講演
11. 杉岡幸次, “ レーザ加工分野の最新動向”, 令和 3 年光産業技術振興協会光産業動向セミナー, オンライン, 7 月 2 日 (2021).
12. 杉岡幸次, “ フェムト秒レーザ゛ 3 次元加工と応用”, レーザ協会第 190 回研究会, オンライン, 5 月 26 日 (2021).

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

1. 2nd Int. Workshop on Frontiers in Lasers and Applications (FLA-2), Online, July (2021).

（5）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. 杉岡幸次, 光産業技術振興協会功労者表彰.
2. 杉岡幸次, 応用物理学会フェロー表彰.
3. 杉岡幸次, Outstanding Paper Award of International Journal of Extreme Manufacturing in 2020 受賞.
4. 杉岡幸次, Best Editor Award of International Journal of Extreme Manufacturing in 2020 受賞.
5. Bai, S., 第 6 回フォトニクスワークショップ 「光が拓く科学技術の未来！！」, 優秀プレゼンテーション賞受賞.
6. Bai, S., RIKEN, The 13th Research Incentive Award 受賞.
7. Zhang, D., Li, X., Fu, Y., Yao, Q., Li, Z., Sugioka, K., “Liquid vortexes and flows induced by femtosecond laser ablation in liquid governing formation of circular and crisscross LIPSS”. が Opto-Electron. Adv. 5 (2022). の Front Cover Page に掲載.