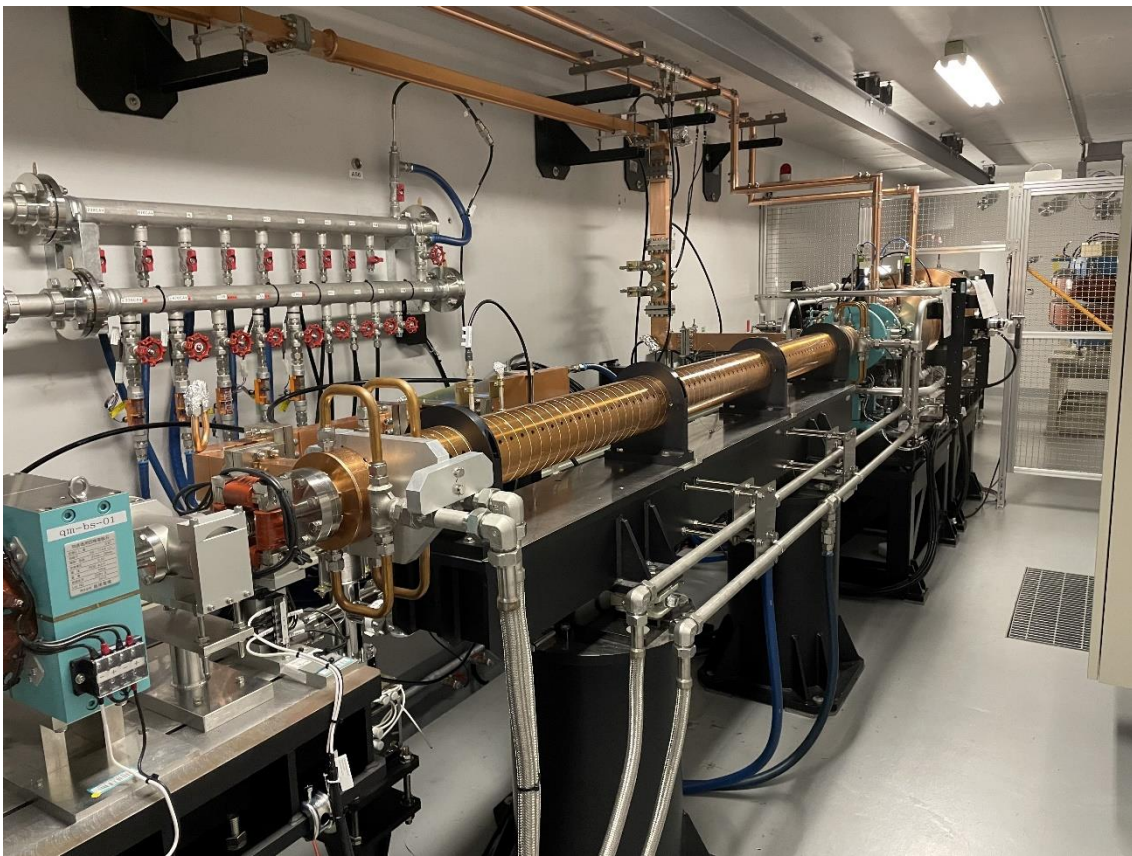


## **Part 3. List of Publications**



**New Injector Linac**

## Papers

1. **"Development of a convenient positron annihilation lifetime and Doppler broadening measurement system for bulk materials using the 17 MeV gamma beam at the NewSUBARU synchrotron radiation facility"**  
Kento Sugitaa, Shuji Miyamotob, Mititaka Terasawab, Sho Amanob, Satoshi Hashimotob, Kenji Umezawaa, Fuminobu Hori  
Nuclear Instruments and Methods in Physics Research Section A, Accepted for publication
2. **"Development of an undulator with a variable magnetic field profile"**  
T. Tanaka, Y. Kida, R. Kinjo, T. Togashi, H. Tomizawa, S. Hashimoto, S. Miyamoto, S. Okabe, Y. Tanaka  
Journal of synchrotron radiation 28, pp.404-409 (2020)
3. **"Neutron emission spectrum from gold excited with 16.6 MeV linearly polarized monoenergetic photons"**  
Y. Kirihara, H. Nakashima, T. Sanami, Y. Namito, T. Itoga, S. Miyamoto, A. Takemoto, M. Yamaguchi, Y. Asano  
Journal of Nucl. Sci. Technol., vol. 57, no. 4, pp. 444-456 (2020)
4. **"Real-time in vivo dosimetry system based on an optical fiber-coupled micro-sized photostimulable phosphor for stereotactic body radiation therapy"**  
R. Yada, K. Maenaka, S. Miyamoto, G. Okada, A. Sasakura, M. Ashida, M. Adachi, T. Sato, T. Wang, H. Akasaka, N. Mukumoto, Y. Shimizu, and R. Sasaki  
Medical Physic, Vo.47, Issue10, pp.5235-5249 (2020)
5. **"Energy and angular distribution of photo-neutrons for 16.6 MeV polarized photon on medium-heavy targets"**  
T. K. Tuyet, T. Sanami, H. Yamazaki, T. Itoga, A. Takeuchi, Y. Namito, S. Miyamoto, Y. Asano  
Nuclear Instrum. Methods in Phys. Res. A 989, 164965 (2021). (Available online 17 December 2020)
6. **"Low-lying electric and magnetic dipole strengths in 207Pb"**  
T. Shizuma, F. Minato, M. Omer, T. Hayakawa, H. Ohgaki, and S. Miyamoto  
Phys. Rev. C 103, 024309 (2021). (Published 5 February 2021)
7. **"Local Structure Analysis on Si-Containing DLC Films based on the Measurement of C K-edge and Si K-edge X-ray Absorption Spectra"**  
Kazuhiro Kanda, Shuto Suzuki, Masahito Niibe, Takayuki Hasegawa, Tsuneo Suzuki and Hedetoshi Saitoh  
Coatings, 10 (2020) 330; doi:10.3390/coatings10040330
8. **"Graphene synthesis from pentacene by soft X-ray irradiation"**  
Akira Heya, Tomohiro Oonuki, Ryuichi Utimi, Kazuhiro Kanda, Ryo Yamasaki and Koji Sumitomo  
Thin Solid Films, 713 (2020) 138365; doi:10.1016/j.tsf.2020.138365
9. **"DLC 膜の構造分析法と ISO20523"**  
神田一浩  
表面技術, 71, 543-546 (2020)
10. **"Effect of Soft X-ray Irradiation on Film Properties of a Hydrogenated Si-Containing DLC Film"**  
Kazuhiro Kanda, Ryo Imai, Shotaro Tanaka, Shuto Suzuki, Masahito Niibe, Takayuki Hasegawa, Tsuneo Suzuki, and Hiroki Akasaka  
Materials, 14, 14924 (2021)

11. **"Control of Molecular Orientation of Spiro-OMeTAD on Substrates"**  
Naoyuki Shibayama, Hiroyuki Maekawa, Yuiga Nakamura, Yuichi Haruyama, Masahito Niibe, Seigo Ito  
ACS Appl. Mater. Interfaces 12, 50187-50191 (2020). doi: 10.1021/acsami.0c15509
12. **"Effect of nonequilibrium atmospheric pressure O<sub>2</sub> plasma-assisted annealing on anatase TiO<sub>2</sub> nanoparticles"**  
Retsuo Kawakami, Yuki Yoshitani, Akihiro Shirai, Shin-ichiro Tanagiya, Hirofumi Koide, Yuki Mimoto, Kosuke Kajikawa, Masahito Niibe, Yoshitaka Nakano, Chisato Azuma, Takashi Mukai  
Appl. Surf. Sci. 526, 146684 (2020). doi: 10.1016/j.apsusc.2020.146684
13. **"Electronic structure of a 3x3-ordered silicon layer on Al(111)"**  
Yusuke Sato, Yuki Fukaya, Mathis Cameau, Asish K. Kundu, Daisuke Shiga, Ryu Yukawa, Koji Horiba, Chin-Hsuan Chen, Angus Huang, Horng-Tay Jeng, Taisuke Ozaki, Hiroshi Kumigashira, Masahito Niibe, and Iwao Matsuda  
Phys. Rev. Mater., 4, 064005 (2020). DOI: 10.1103/PhysRevMaterials.4.06405.
14. **"X-ray absorption and photoemission spectroscopy of bulk insulating materials using graphene"**  
Satoru Suzuki, Yuichi Haruyama, Akinobu Yamaguchi, Tomoki Yamamoto, Takuya Yoshizumi, Ayaka Fujii, Seiji Nakashima, Yakumo Fuchiwaki, Hironori Fujisawa, Takuo Ohkochi, Mari Ishihara, Hirotsuke Sumida  
J. Appl. Phys. 128, 015304-1-8 (2020)
15. **"Water electrolysis using thin Pt and RuO<sub>x</sub> catalysts deposited by a flame-annealing method on pencil-lead graphite-rod electrodes"**  
R. Tsuji, Y. Koshino, H. Matsutani, Y. Haruyama, M. Niibe, S. Suzuki, S. Nakashima, H. Fujisawa, S. Ito  
ACS Omega 5, 6090-6099 (2020)
16. **"Immobilizing a  $\pi$ -Conjugated Catecholato Framework on Surfaces of SiO<sub>2</sub> Insulator Films via a One-Atom Anchor of a Platinum Metal Center to Modulate Organic Transistor Performance"**  
Keishiro Tahara, Yuya Ashihara, Takashi Ikeda, Tomofumi Kadoya, Jun-ichi, Fujisawa, Yoshiki Ozawa, Hiroyuki Tajima, Noriaki Toyoda, Yuichi Haruyama, and Masaaki Abe  
Inorganic Chemistry, 59, 17945–17957 (2020). doi.org/10.1021/acs.inorgchem.0c02163
17. **"A Global Shutter Wide Dynamic Range Soft X-Ray CMOS Image Sensor with Backside-Illuminated Pinned Photodiode, Two-Stage Lateral Overflow Integration Capacitor, and Voltage Domain Memory Bank"**  
H. Shike, R. Kuroda, R. Kobayashi, M. Murata, Y. Fujihara, M. Suzuki, S. Harada, T. Shibaguchi, N. Kuriyama, T. Hatsui, J. Miyawaki, T. Harada, Y. Yamasaki, T. Watanabe, Y. Harada  
IEEE Trans. Electron Devices 68, 2056-2063 (2021)
18. **"A Global Shutter Wide Dynamic Range Soft X-ray CMOS Image Sensor with BSI Pinned Photodiode, Two-stage LOFIC and Voltage Domain Memory Bank"**  
H. Shike, R. Kuroda, R. Kobayashi, M. Murata, Y. Fujihara, M. Suzuki, T. Shibaguchi, N. Kuriyama, J. Miyawaki, T. Harada, Y. Yamasaki, T. Watanabe, Y. Harada and S. Sugawa  
IEEE IEDM 2020, 16.4, pp. 339-342 (2020)
19. **"Analysis of Chemical Contents Spatial Distribution in EUV Resist Using Resonant Soft X-ray Scattering Method"**  
Jun Tanaka, Takuma Ishiguro, Tetsuo Harada, Takeo Watanabe  
J. Photopolym. Sci. Technol. 33, pp. 491-498 (2020)

20. **"Higher Sensitive Extreme Ultraviolet (EUV) Resist Materials Derived From p-t-Butylcalix[n]arenes (n = 4 and 8) "** (Invited)  
Hiroyuki Maekawa, Hiroto Kudo, Takeo Watanabe, Hiroki Yamamoto, Kazumasa Okamoto, Takahiro Kozawa  
Photopolym. Sci. Technol., 33, 45-51 (2020)
21. **"Removal of Surface Contamination by Atomic Hydrogen Annealing"**  
A. Heya, T. Harada, M. Niibe, K. Sumitomo, and T. Watanabe  
J. Photopolym. Sci. Technol. 33, 419-426 (2020)
22. **"Molecular Structure Evaluation of Bulk Polytetrafluoroethylene Modified by X-ray Irradiation"**  
Masaya Takeuchi, Atsushi Kinoshita, Akinobu Yamaguchi, Yuichi Utsumi  
Journal of Photopolymer Science and Technology, 33, 3, 295-299 (2020)
23. **"Design and Fabrication of PTFE Substrate Integrated Waveguide Coupler by SR Direct Etching"**  
M. Kishihara, M. Takeuchi, A. Yamaguchi, Y. Utsumi, and I. Ota  
IEICE Trans. Electron. Volume and Number: Vol.E104-C, No.9 (2021)
24. **"Anisotropic pyrochemical dry etching of fluorinated ethylene propylene induced by pre-irradiation with synchrotron radiation"**  
Kaito Fujitani, Masaya Takeuchi, Yuichi Haruyama, Akinobu Yamaguchi, and Yuichi Utsumi  
AIP Advances 11, 025104 (2021)
25. **"Non-Destructive Imaging on Synthesised Nanoparticles"**  
Kelvin Elphick, Akinobu Yamaguchi, Akira Otsuki, Neil Lonio Hayagan, and Atsufumi Hirohata  
Materials, 14, 613 (2021)
26. **"Direct observation of a magnetic domain change in Ni wire and film on a LiNbO<sub>3</sub> substrate using X-ray magnetic circular dichroic photoemission electron microscopy"**  
Ryo Nakamura, Shunya Saegusa, Naoya Akamatsu, Keisuke Yamada, Takeshi Ogasawara, Masaki Oura, Takuo Ohkochi, Akinobu Yamaguchi  
Japanese Journal of Applied Physics 60, SBBC01-1-5 (2021)
27. **"A Lab in Bento Box: Autonomous centrifugal microfluidic system for an enzyme-linked immunosorbent assay"**  
Takaaki Abe, Shunya Okamoto, Akinobu Taniguchi, Michiyasu Fukui, Akinobu Yamaguchi, Yuichi Utsumi, Yoshiaki Ukita  
Analytical Methods, 12, 4858-4866 (2020)
28. **"Highly Stable and Reproducible Au Nanorod Arrays for Near-Infrared Optofluidic SERS sensor"**  
Samir Kumar, Takao Fukuoka, Ryo Takahashi, Mitsuhiro Yoshida, Yuchi Utsumi, Akinobu Yamaguchi, Kyoko Namura, Motofumi Suzuki  
Materials Letters 286, 129106 (2021)
29. **"Visualization of elemental distributions and local analysis of element-specific chemical-states of Arachnoidiscus sp. frustule using soft x-ray spectromicroscopy"**  
Tomoko Ishihara, Takuo Ohkochi, Akinobu Yamaguchi, Yoshinori Kotani, Masaki Oura  
PLOS ONE 15(12), e0243874 (2020)
30. **"Gold nanoparticles enhance EGFR inhibition and irradiation effects in head and neck**

### **squamous carcinoma cells"**

Masahiko Kashin, Yasumasa Kakei, Shun Teraoka, Takumi Hasegawa, Akinobu Yamaguchi, Takao Fukuoka, Ryohei Sasaki, Masaya Akashi  
BioMed Research International Article ID 1281645 (2020)

31. **"Application of microprobe soft x-ray fluorescence analyses to characterize the multi-layered buried micro-structure"**  
M. Oura, T. Ishihara, A. Yamaguchi  
Jpn. J. Appl. Phys., 59, 060902 (2020)
32. **"Dependence of Gilbert damping constant on microstructure in nanocrystalline YIG thin films chemically prepared by co-precipitation and spin-coating on a Si substrate"**  
K. Yamada, K. Kogiso, Y. Shiota, A. Yamaguchi, T. Moriyama, T. Ono, and M. Shima  
Journal of Magnetism and Magnetic Materials 513, 167253 (2020)
33. **"Enhancement of the rectifying voltage and Gilbert damping of a Ni wire fabricated on LiNbO3 substrate"**  
A. Yamaguchi, R. Nakamura, S. Saegusa, N. Akamatsu, K. -J. Kim, T. Lee, A. Nakao, T. Ohkochi, K. Yamada  
Japanese Journal of Applied Physics 59, 083001 (2020)
34. **"Solid/Liquid-interface-dependent synthesis and immobilization of copper-based particles nucleated by the X-ray-radiolysis-induced photochemical reaction"**  
Akinobu Yamaguchi, Ikuya Sakurai, Ikuo Okada, Hirokazu Izumi, Mari Ishihara, Takao Fukuoka, Satoru Suzuki, and Yuichi Utsumi  
Journal of Synchrotron Radiation 27, 1008-1014 (2020)
35. **"マイクロ波加熱によるオンチップ金ナノ粒子合成"**  
竹内雅耶, 岸原充佳, 福岡隆夫, 山口明啓, 内海裕一  
電気学会論文誌 C Vol. 140, pp. 471-475 (2020)  
**"On Chip Synthesis of Au Nanoparticles by Microwave Heating"**  
Masaya Takeuchi, Mitsuyoshi Kishihara, Takao Fukuoka, Akinobu Yamaguchi, Yucih Utsumi  
IEEE Transactions on C Vol. 140, pp. 471-475 (2020)
36. **"Lab-on-a-disc におけるオイラー力を用いた異密度液体の混合"**  
竹内雅耶, 藤谷海斗, 三枝峻也, 石本睦, 山口明啓, 内海裕一  
電気学会論文誌 C Vol. 140, pp. 465-470 (2020)  
**"Mixing of difference density liquids by Euler-force on Lab-on-a-disc"**  
Masaya Takeuchi, Kaito Fujitani, Atsushi Ishimoto, Akinobu Yamaguchi, Yuichi Utsumi  
IEEE Transactions on C Vol. 140, pp. 465-470 (2020)
37. **"Observing the Delamination Interface in Multi Layered Thin Films with a MgAg Alloy Top Layer and Organic Semiconductor under Layers on a Flexible Substrate"**  
KOBAYASHI Toshiro, FURUMOTO Hideaki, YAMAGUCHI Akinobu, KANEMATSU Hideyuki, GRUESCU Ion Cosmin  
Advanced Experimental Mechanics, Vol.5, pp.151-156 (2020)

### Books

1. **"Characterization of Hydrogen-Free and Hydrogenated DLC Films"**  
Toru Harigai, Takahiro Imai, Hirofumi Takikawa, Satoru Kaneko, Shinsuke Kunitsugu, Masahito Niibe, Kazuhiro Kanda and Masao Kamiya  
in "Carbon Related Materials", Springer, 2020, pp. 55-69 (ISBN 978-981-15-7610-2)



### Proceedings

1. **"Resist pattern inspection for defect reduction in sub-15 nm templates"**  
T. Motokawa, M. Suenaga, K. Hagihara, N. Iida nee Sakurai, R. Komatsu, H. Sakurai, S. Kanamitsu, K. Tsuda, T. Harada, T. Watanabe  
Proc. SPIE 11518 (2020) 115180H.
2. **"Showcase of the Fundamental Research to Resolve the Technical Issues in EUV Lithography at NewSUBARU Synchrotron Light Facility of University of Hyogo"** (Invited)  
Takeo Watanabe, Tetsuo Harada, Shinji Yamakawa  
Proceedings of EUVL International Workshop 2020.
3. **"Reflectance Measurement of EUV Mask under OoB-Irradiation, and Hydrogen and Water Vapor Environments under the High Power EUV Irradiation"** (Invited)  
Takeo Watanabe and Tetsuo Harada  
Proceedings of EUVL International Workshop 2020.
4. **"Showcase of the Fundamental EUVL Research"** (Invited)  
Takeo Watanabe, Tetsuo Harada, and Shinji Yamakawa  
Proceedings of 2020 EUVL Supplier Showcase.
5. **"Fundamental Research Activities of EUV Lithography at NewSUBARU Synchrotron Light Facility"** (Invited)  
Takeo Watanabe and Tetsuo Harada  
Proceedings of High-brightness Sources and Light-driven Interactions Congress, OSA, Nov. 16-20, 2020.
6. **"Fundamental Research Activities of EUV Lithography at NewSUBARU Synchrotron Light Facility"** (Invited)  
Takeo Watanabe and Tetsuo Harada,  
Proceedings of 5th EUV-FEL Workshop 2021, Jan. 22, 2021
7. **"Real-time optical monitoring of cell culture in centrifugal microfluidics"**  
Edwin En-Te Hwu, Lina Gruzinskyte, Atsushi Ishimoto, Laura Seriola, Sriam Thoppe Rajendran, Akinobu Yamaguchi, Kinga Zór, and Anja Boisen  
The 24th International Conference on Miniaturized Systems for Chemistry and Life Science (mTAS 2020), pp. 1039 - 1040 (2020)

### Articles

1. **"Synchrotron radiation extreme ultraviolet lithography technology that opens up the world of innovative IoT and AI"** (Invited paper)  
Takeo Watanabe  
Clean Technology, 2, pp.1-5 (2020). (in japanese)

### International Meetings

1. **"GDR cross sections updated in the IAEA-CRP"**  
H. Utsunomiya, I. Gheorghe, D. M. Filipescu, K. Stopani, S. Belyshev, H. Wang, G. Fan, T.i Ariizumi, Y.-W. Lui, D. Symochko, M. Krzysiek, S. Miyamoto, S. Goriely, and T. Kawano  
EPJ Web of Conferences 239, 01002 (2020)  
<https://doi.org/10.1051/epjconf/202023901002>
2. **"NEXAFS evaluation for the lumen of DLC coated small diameter long-sized medical objective tube by using AC high-voltage burst plasma CVD method"**  
Yuichi Imai, Kazuhiro Kanda, Yasuhiro Fujii, Susumu Ouzawa, Daiki Ousaka and Tatsuyuki Nakatani  
12th International Symposium on Advanced Plasma Science and its Applications for Nitrides and Nanomaterials / 13th International Conference on Plasma-Nano Technology & Science (ISPlasma2020/IC-PLANTS2020) [10P2-52], 2020.3.8-11, Nagoya University
3. **"Stability of Amino Acid Precursors in Space: Verification by Ground Simulations and Space Experiments"**  
Kensei Kobayashi, Tomohito Sato, Takuya Yokoo, Soushi Kuramoto, Yoko Kebukawa, Hajime Mita, Miki Nakayama, Kazumichi Nakagawa, Hiromi Shibata, Hitoshi Fukuda, Yoshiyuki Oguri, Isao Yoda, Satoshi Yoshida, Kazuhiro Kanda, Itsuki Sakon, Hajime Yano, Hirofumi Hashimoto, Shin-ichi Yokobori and Akihiko Yamagishi  
European Astrobiology Network Association 2020 (EANA2020) 2020.8.27-28 virtual meeting
4. **"A Global Shutter Wide Dynamic Range Soft X-ray CMOS Image Sensor with BSI Pinned Photodiode, Two-stage LOFIC and Voltage Domain Memory Bank"**  
H. Shike, R. Kuroda, R. Kobayashi, M. Murata, Y. Fujihara, M. Suzuki, T. Shibaguchi, N. Kuriyama, J. Miyawaki, T. Harada, Y. Yamasaki, T. Watanabe, Y. Harada and S. Sugawa  
IEEE IEDM 2020, Online, 2020/12.
5. **"Resist pattern inspection for defect reduction in sub-15 nm templates "**  
T. Motokawa, M. Suenaga, K. Hagihara, N. Iida nee Sakurai, R. Komatsu, H. Sakurai, S. Kanamitsu, K. Tsuda, T. Harada, T. Watanabe  
SPIE Photomask technology 2020, Online, 2020/9.
6. **"Removal of Surface Contamination by Atomic Hydrogen Annealing"**  
A. Heya, T. Harada, M. Niibe, K. Sumitomo, and T. Watanabe  
ICPST37, Japan, 2020/6.
7. **"Analysis of Chemical Contents Spatial Distribution in EUV Resist Using Resonant Soft X-ray Scattering Method"**  
Jun Tanaka, Takuma Ishiguro, Tetsuo Harada, Takeo Watanabe  
ICPST37, Japan, 2020/6.
8. **"Showcase of the Fundamental Research to Resolve the Technical Issues in EUV Lithography at NewSUBARU Synchrotron Light Facility of University of Hyogo"** (Web online) (Invited)  
Takeo Watanabe, Tetsuo Harada, Shinji Yamakawa  
EUVL International Workshop, Jun. 2020, Berkeley, CA, USA, Jun. 7-11, 2020.
9. **"Reflectance Measurement of EUV Mask under OoB-Irradiation, and Hydrogen and Water Vapor Environments under the High Power EUV Irradiation"**  
Takeo Watanabe and Tetsuo Harada

EUVL International Workshop (Web online), Jun. 2020, Jun. 7-11, 2020.

10. **"Higher Sensitive Extreme Ultraviolet (EUV) Resist Materials Derived From p-t-Butylcalix[n]arenes (n=4 and 8) "**  
Hiroyuki Maekawa, Hiroto Kudo, Takeo Watanabe, Hiroki Yamamoto, Kazumasa Okamoto, Takahiro Kozawa  
ICPST-37, Japan, May. 18-21, 2020.
11. **"Showcase of the Fundamental EUVL Research"** (Web online) (Invited)  
Takeo Watanabe, Tetsuo Harada, and Shinji Yamakawa  
2020 EUVL Supplier Showcase, Web conference by ZOOM, 2020.Sep. 14-15, 2020.
12. **"Fundamental Research Activities of EUV Lithography at NewSUBARU Synchrotron Light Facility"** (web online) (Invited)  
Takeo Watanabe and Tetsuo Harada  
High-brightness Sources and Light-driven Interactions Congress, OSA, Nov. 16-20, 2020.
13. **"Fundamental Research Activities of EUV Lithography at NewSUBARU Synchrotron Light Facility"** (Web online) (Invited)  
Takeo Watanabe and Tetsuo Harada  
5th EUV-FEL Workshop 2021, Jan. 22, 2021.
14. **"Aqueous-soluble Ink including Nano Beacon"**  
Akinobu Yamaguchi, Yuichi Utsumi, Kyoko Namura, Motofumi Suzuki, and Takao Fukuoka  
L51-03, Pittcon 2021, March 11, 2021. Oral.
15. **"Real-time optical monitoring of cell culture in centrifugal microfluidics"**  
Edwin En-Te Hwu, Lina Gruzinskyte, Atsushi Ishimoto, Laura Seriola, Sriram Thoppe Rajendran, Akinobu Yamaguchi, Kinga Zór, and Anja Boisen  
M1-180.e, The 24th International Conference on Miniaturized Systems for chemistry and life sciences ( $\mu$ TAS 2020), October 5, Monday, 2020.
16. **"Study on magnetic properties of artificial magnets induced by ferromagnetic/ferroelectric heterojunction"**  
Akinobu Yamaguchi, Ryo Nakamura, Shunya Saegusa, Naoya Akamatsu, Aiko Nakao, Yuichi Utsumi, Masaki Oura, Takeshi Ogasawara, Keisuke Yamada, Takuo Ohkochi  
IEEE-NEMS 2020 (The 15th IEEE International Conference on Nano/Micro Engineered & Molecular Systems," TS9-3, September 29, 2020, Oral
17. **"Study on solid/solid- and solid/liquid-interface-dependent material properties for an artificial multiferroic system and additive manufacturing process"**  
Akinobu Yamaguchi, Shunya Saegusa, Ryo Nakamura, Naoya Akamatsu, Aiko Nakao, Ikuya Sakurai, Ikuo Okada, Yuichi Utsumi, Takeshi Ogasawara, Keisuke Yamada, Masaki Oura, Takuo Ohkochi  
2020 International Conference on Solid State Deives and Materials (SSDM 2020), C-2-04, September 28, 2020, Oral



## Academic Degrees

### **Master of Engineering**

Takuma Ishiguro (University of Hyogo)

"Resonant Soft X-ray Reflectivity for the Chemical Analysis in Thickness Direction of EUV Resist"

Ayato Ohgata (University of Hyogo)

"Hydrogen Damage Evaluation of Mo/Si Multilayer using High-Power EUV Irradiation Tool"

Jun Tanaka (University of Hyogo)

"Analysis of Chemical Contents Spatial Distribution in EUV Resist Using Resonant Soft X-ray Scattering Method"

Keisuke Tsuda (University of Hyogo)

"Development of Grazing-Angle Coherent EUV Scatterometry Microscope for Resist Pattern Observation"

Atsushi Ishimoto (University of Hyogo)

"Study on implementation of mixing system in microfluidic devices"

Shunya Saegusa (University of Hyogo)

"Particle agglutination control by microsystem and its application to molecular sensor"

Ryo Nakamura (University of Hyogo)

"Creation of novel artificial materials consisting of heterojunction and study on their physical properties"