CV

Satoshi Yamaguchi, PhD

Associate Professor,

Department of Chemistry & Biotechnology, School of Engineering

The University of Tokyo

He was born in Osaka, Japan in 1975.

Education

1999 Bachelor, at Department of Chemistry & Biotechnology, The University of Tokyo

2001 Master, at Department of Chemistry & Biotechnology, The University of Tokyo

2004 PhD (Engineering), at Department of Chemistry & Biotechnology, The University of Tokyo
(Supervisor: Prof. Teruyuki Nagamune)

Academic experiences

2004-2005 Postdoctoral Researcher at Kyusyu University

2005-2006 Postdoctoral Researcher at Kyoto University

2006-2008 Project Assistant Professor at School of Engineering, The University of Tokyo

2008-2013 Assistant Professor at School of Engineering, The University of Tokyo

(2010 Visiting Researcher at Goethe-Universität Frankfurt am Main)

2013-2019 Lecturer at Research Center for Advanced Science & Technology (RCAST), The University of Tokyo

2016-2020 PRESTO program researcher, Japan Science and Technology Agency (JST)

2019-2022 Associate Professor at RCAST, The University of Tokyo

2022- Associate Professor at School of Engineering, The University of Tokyo

Research Interest

His current research interest is in development of chemical tools and functional materials for controlling biomolecules and living cells, with the aim of creating novel strategies for answering to critical questions in bioscience and solving problems in biotechnology and bioprocess.

Recent Key tools: sterically bulky caging for biomolecules and cells (ChemCommun2010, 2013, Chem. Eur. J. 2022); photo-responsive anchoring materials for living cells (Angew. Chem. 2012, JACS. 2022, 2022-2); photo-responsive protein aggregates (Adv. Health. Mater. 2016); stimuli-responsive Raman probes (Sci. Rep.2017); photo-responsive single-cell array of floating cells (Lab Chip2017, ACS Appl. BioMater.2020); microfluidic cell cutter for juxta-membrane analysis (Sci. Rep.2017)

Publication list

【Original Papers】

1. T. Kosaka1, S. Yamaguchi*, S. Izuta, S. Yamahira, Y. Shibasaki, H. Tateno, A. Okamoto*, Bioorthogonal Photoreactive surfaces for single-cell analysis of intercellular communications,
   J. Am. Chem. Soc., **144**, 17980-17988, 2022.
   (**Highlighted as Supplementary Cover**)
2. S. Miyasato, K. Iwata, R. Mura, S. Nakamura, K. Yanagida, H. Shindou, Y. Nagata, M. Kawahara, S. Yamaguchi, J. Aoki, A. Inoue, T. Nagamune, T. Shimizu, M. Nakamura, Constitutively active GPR43 is crucial for proper leukocyte differentiation,
   FASEB J., **37**, e22676, 2022.
3. S. Yamaguchi*, K. Yamamoto, R. Yamamoto, S. Takamori, A. Ishiwatari, K. Minamihata, T. Nagamune, A. Okamoto, Intracellular protein photoactivation using sterically bulky caging,
   ChemBioChem, **23**, e202200476, 2022.
4. S. Yamahira*, R. Misawa, T. Kosaka, M. Tan, S. Izuta, H. Yamashita, Y. Heike, A. Okamoto, T. Nagamune, S. Yamaguchi*, Photoactivatable materials for versatile single-cell patterning based on the photocaging of cell-anchoring moieties through lipid self-assembly,
   J. Am. Chem. Soc., **144**, 13154–13162, 2022.
   (**Highlighted as Supplementary Cover**)
5. S. Yamaguchi*, R. Ikeda, Y. Umeda, T. Kosaka, S. Yamahira A. Okamoto*, Chemoenzymatic labeling to visualize intercellular contacts using lipidated sortase A,
   ChemBioChem, **23**, e202200474, 2022.
   (**Highlighted as Front Cover**)
6. S. Yamaguchi*, K. Chujo, N. Ohashi, K. Minamihata, T. Nagamune, Photo-degradable protein-polymer hybrid shells for caging living cells,
   Chemistry- A Eur. J., **28**, e202103941, 2022.
   (**Highlighted by ChemistryViews**)
7. S. Yamaguchi*, S. Takamori, K. Yamamoto, A. Ishiwatari, K. Minamihata, E. Yamada, A. Okamoto, T. Nagamune,
   Sterically bulky caging of transferrin for photoactivatable intracellular delivery,
   Bioconj. Chem., **32**, 1535–1540, 2021.
8. S. Yamaguchi*, N. Ohashi, K. Minamihata, T. Nagamune, Photodegradable avidin-biotinylated polymer conjugate hydrogels for cell manipulation,
   Biomater. Sci., **9**, 6416 - 6424, 2021.
   (**Highlighted as Back Cover**)
9. S. Yamaguchi*, R. Takagi, T. Hosogane, Y. Ohashi, Y. Sakai, S. Sakakihara, R. Iino, K. V. Tabata, H. Noji, A. Okamoto*, Single cell array enclosed with a photodegradable hydrogel in mi-crowells for image-based cell classification and selective photore-lease of cells,
   ACS Appl. Bio Mater., **3**, 5887–5895, 2020.
   (**Highlighted as Inside Cover**)
10. S. Yamaguchi*, Y. Takasaki, S. Yamahira, T. Nagamune, Photo-cleavable peptide-poly(ethylene glycol) conjugate surfaces for light-guided control of cell adhesion,
    Micromachines, **11**, 762, 2020.

11. N. T. Jarzębska, S. Yamaguchi*, S. Izuta, T. Kosaka, S. Yamahira, T. Nagamune, A. Okamoto*, Photo-responsive materials with strong cell trapping ability for light-guided manipulation of nonadherent cells,
Biomater. Sci., **7**, 4514–4518, 2019.
12. S. Yamaguchi*, K. Higashi, T. Azuma, A. Okamoto*, Supramolecular polymeric hydrogels for ultrasound-guided protein release,
Biotechnol. J., **14**, e1800530, 2019.
13. A. Ishijima, S. Yamaguchi, T. Azuma*, E. Kobayashi, Y. Shibasaki, T. Nagamune, I. Sakuma*, Selective intracellular delivery of perfluorocarbon nano-droplets for cytotoxicity threshold reduction on ultrasound-induced vaporization,
Cancer Rep., **2**, e1165, 2019.
14. S. Izuta, S. Yamaguchi*, T. Kosaka, A. Okamoto*, Reversible and photoresponsive immobilization of nonadherent cells by spiropyran-conjugated PEG–lipids,
ACS Appl. Bio Mater., **2**, 33–38, 2019.
15. S. Hiratsuka, T. Tomita, T. Mishima, Y. Matsunaga, T. Omori, S. Ishibashi, S. Yamaguchi, T. Hosogane, H. Watarai , M. Omori-Miyake, T. Yamamoto, N. Shibata, A. Watanabe, H. Aburatani, M. Tomura, K. A. High, Y. Maru*, Hepatoentrained B220+ CD11c+ NK1.1+ cells regulate pre-metastatic niche formation in the lung,
EMBO Mol. Med., **10**, e8643, 2018.
16. M. Tan, S. Yamaguchi*, M. Nakamura, T. Nagamune*, Real-time monitoring of pH-dependent intracellular trafficking of ovarian cancer G protein-coupled receptor 1 in living leukocytes,
J. Biosci. Bioeng., **126**, 363-370, 2018.
17. Y. Nakanishi, M. Tan, T. Ichiki, J. Yoshihara, N. Maekawa, I. Takenoshita, K. Yanagida, S. Yamahira, S. Yamaguchi, T. Nagamune, T. Yokomizo, T. Shimizu, M. Nakamura*, Stepwise phosphorylation of leukotriene B4 receptor 1 defines cellular responses to leukotriene B4,
Sci. Signal., **11**, eaao5390, 2018.
18. S. Izuta, S. Yamaguchi*, R. Misawa, S. Yamahira, M. Tan, M. Kawahara, T. Suzuki, T. Takagi, K. Sato, M. Nakamura, T. Nagamune, A. Okamoto*, Microfluidic preparation of anchored cell membrane sheets for in vitro analyses and manipulation of the cytoplasmic face,
Sci. Rep., **7**, 14962, 2017.
19. M. Tan, S. Yamaguchi*, S. Yamahira, M. Nakamura, T. Nagamune*, Quantitative image cytometry for analyzing intracellular trafficking of G protein-coupled receptors on a chemically-trapping single cell array,
Lab on a Chip, **31**, 1933-1938, 2017.
20. E. Yamamoto, S. Yamaguchi*, T. Nagamune*, Protein refolding is improved by adding nonionic polyethylene glycol monooleyl ethers with various polyethylene glycol lengths,
Biotechnol. J., **12**, 201600689, 2017.
21. A. Ishijima, K. Minamihata, S. Yamaguchi, S. Yamahira, R. Ichikawa, E. Kobayashi, M. Iijima, Y. Shibasaki, T. Azuma*, T. Nagamune*, I. Sakuma *, Selective intracellular vaporisation of antibody- conjugated phase-change nano-droplets in vitro,
Sci. Rep., **7**, 44077, 2017.
22. S. Yamaguchi, T. Matsushita, S. Izuta, S. Katada, M. Ura, T. Ikeda, G. Hayashi, Y. Suzuki, K. Kobayashi, K. Tokunaga, Y. Ozeki, A. Okamoto*, Chemically-activatable alkyne-tagged probe for imaging microdomains in lipid bilayer membranes,
Sci. Rep., **7**, 41007, 2017.

23. S. Yamaguchi, M. Ura, S. Izuta, A. Okamoto*, Chemically activatable alkyne tag for low pH-enhanced molecular labeling on living cells,
Bioconj. Chem., **27**, 1976-1980, 2016.
24. A. Ishiwatari, S. Yamaguchi*, S. Takamori, S. Yamahira, K. Minamihata, T. Nagamune*, Photolytic protein aggregates: versatile materials for controlled release of active proteins,
Adv. Health. Mater., **5**, 1002-1007, 2016.
25. A. Ishijima, J. Tanaka, T. Azuma, K. Minamihata, S. Yamaguchi, E. Kobayashi, T. Nagamune, I. Sakuma*, The lifetime evaluation of vapourised phase-change nano-droplets,
Ultrasonics, **69**, 97-105, 2016.
26. M. Termtanasombat, H. Mitsuno, N. Misawa, S. Yamahira, T. Sakurai, S. Yamaguchi, T. Nagamune, R. Kanzaki*, Cell-based odorant sensor array for odor discrimination based on insect odorant receptors,
J. Chem. Ecol., **42**, 716-724, 2016.
27. Y. Oshiba, T. Tamaki, H. Ohashi, H. Hirakawa, S. Yamaguchi, T. Nagamune, T. Yamaguchi*, Correlation between activity and molecular structure around the active center of Cytochrome P450cam conjugates,
J. Chem. Eng. Japan, **49**, 475-480, 2016.
28. M. Termtanasombat, H. Mitsuno, N. Misawa, S. Yamahira, S. Yamaguchi, T. Nagamune, R. Kanzaki*, Development of cell-based sensor array for targeting multiple odorants based on insect odorant receptors,
Chem. Sens., **41**, E258, 2016.
29. J. Zhang, S. Yamaguchi, T. Nagamune*, Sortase A-mediated synthesis of ligand-grafted cyclized peptides for modulating a model protein-protein interaction,
Biotechnol. J., **10**, 1499-1505, 2015.
30. K. Minamihata, Y. Maeda, S. Yamaguchi, W. Ishihara, A. Ishiwatari, S. Takamori, S. Yamahira, T. Nagamune*, Photosensitizer and Polycationic Peptide-Labeled Streptavidin as a Nano-Carrier for Light-Controlled Protein Transduction,
J. Biosci. Bioeng., **120**, 630-636, 2015.
31. S. Yamahira, S. Yamaguchi*, M. Kawahara, T. Nagamune*, Collagen surfaces modified with photo-cleavable polyethylene glycol-lipid support versatile single-cell arrays of both non-adherent and adherent cells,
Macromol. Biosci., **14**, 1670-1676, 2014.
32. S. Yamaguchi*, R. Kawabata, E. Yamamoto, T. Nagamune*, Imidazolium-based polymer hydrogels with microdomains as carriers of hydrophobic molecules,
Polymer J., **46**, 880-886, 2014.
33. W. Lan, S. Yamaguchi, T. Yamamoto, S. Yamahira, M. Tan, N. Murakami, J. Zhang, M. Nakamura, T. Nagamune*, Visualization of the pH-dependent dynamic distribution of G2A in living cells,
FASEB J., **28**, 3965-3974, 2014.
34. S. Yamahira, Y. Takasaki, S. Yamaguchi*, K. Sumaru, T. Kanamori, T. Nagamune*, Dynamic photochemical lipid micropatterning for manipulation of nonadherent mammalian cells,
Methods Cell Biol.,**120**, 131-144, 2014.
35. S. Yamaguchi, S. Komiya, E. Matsunuma, S. Yamahira, Y. Kihara, J. Miyake, T. Nagamune*, Transfer printing of transfected cell microarrays from poly(ethylene glycol)-oleyl surfaces onto biological hydrogels,
Biotechnol. Bioeng., **110**, 3269-3274, 2013.

36. Y. Oshiba, T. Tamaki, H. Ohashi, H. Hirakawa, S. Yamaguchi, T. Nagamune, T. Yamagcuhi*, Effect of length of molecular recognition moiety on enzymatic activity switching,
J. Biosci. Bioeng., **116**, 433-437, 2013.
37. U. Tomita, S. Yamaguchi*, Y. Maeda, K. Chujo, K. Minamihata, T. Nagamune*, Protein cell-surface display through in situ enzymatic modification of proteins with poly(ethylene glycol)-lipid,
Biotechnol. Bioeng., **110**, 2785-2789, 2013.
38. K. Takahara, T. Azuma, K. Yoshinaka, S. Yamaguchi, M. Maezawa, I. Sakuma, T. Nagamune, S. Takagi, Y. Matsumoto, Time lapse observation of phase change nano droplet after vaporization stimulated by ultrasound,
J. Acoust. Soc. Am., **134**, 4050, 2013.
39. M. Nakamura*, D. Yasuda, N. Hirota, T. Yamamoto, S. Yamaguchi, T. Shimizu, T. Nagamune, Amino Acid residues of g-protein-coupled receptors critical for endoplasmic reticulum export and trafficking,
Methods Enzymol. **521**, 203-216, 2013.
40. J. Zhang, S. Yamaguchi, H. Hirakawa, T. Nagamune*, Intracellular protein cyclization catalyzed by exogenously transduced Streptococcus pyogenes sortase A,
J. Biosci. Bioeng., **116**, 298-301, 2013.
41. Y. Oshiba, T. Tamaki, H. Ohashi, H. Hirakawa, S. Yamaguchi, T. Nagamune, T. Yamaguchi*, Molecular recognition moiety and its target biomolecule interact in switching enzyme activity,
J. Biosci. Bioeng., **115**, 639-644, 2013.
42. S. Takamori, S. Yamaguchi*, N. Ohashi, T. Nagamune*, Sterically bulky caging for light- inducible protein activation,
Chem. Commun., **49**, 3013-3015, 2013.
43. S. Yamaguchi*, S. Yamahira, K. Kikuchi, K. Sumaru, T. Kanamori, T. Nagamune*, Photocontrollable dynamic micropatterning of non-adherent mammalian cells using a photocleavable poly(ethylene glycol) lipid,
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45. T. Takano, S. Yamaguchi, E. Matsunuma, S. Komiya, M. Shinkai, T. Takezawa, T. Nagamune*, Cell transfer printing from patterned poly(ethylene glycol)-oleyl surfaces to biological hydrogels for rapid and efficient cell micropatterning,
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46. M. Hamon, K. Montagne, N. Kojima, T. Ozawa, R. Ishii, S. Yamaguchi, T. Nagamune, T. Ushida, Y. Sakai*, Avidin-biotin-based approach to forming heterotypic cell clusters and cell sheets on a gas-permeable membrane,
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47. Y. Yamamura, H. Hirakawa, S. Yamaguchi, T. Nagamune*, Enhancement of sortase A-mediated protein ligation by inducing a beta-hairpin structure around the ligation site,
Chem. Commun., **47**, 4742-4744, 2011.
48. E. Yamamoto, S. Yamaguchi*, Nagamune*, Protein Refolding by N-Alkylpyridinium and N-Alkyl-N-methylpyrrolidinium Ionic Liquids,
Appl. Biochem. Biotechnol., **164**, 957-967, 2011.

49. E. Yamamoto, S. Yamaguchi, Nagamune*, Synergistic effects of detergents and organic solvents on protein refolding: control of aggregation and folding rates,
J. Biosci. Bioeng., **111**, 10-15, 2011.
50. S. Yamaguchi, Y. Cheng, S. Nakajima, T. Furuta, T. Nagamune*, Light-activated gene expression from site-specific caged DNA with a biotinylated photolabile protection group,
Chem. Commun., **46**, 2244-2246, 2010.
51. N. Hirota, D. Yasuda, T. Hashidate, T. Yamamoto, S. Yamaguchi, T. Nagamune, T. Nagase, T. Shimizu, M. Nakamura*, Amino acid residues critical for endoplasmic reticulum export and recycling of platelet-activating factor receptor,
J. Biol. Chem. **285**, 5931-5940, 2010.
52. E. Yamamoto, S. Yamaguchi*, N. Sasaki, H.-B. Kim, T. Kitamori, T. Nagamune*, Artificial chaperone-assisted refolding in a microchannel,
Biopro. Biosyst. Eng., **33**, 171-177, 2010.
53. S. Yamaguchi*, E. Yamamoto, T. Nagamune*, Development of Small Molecular Artificial Chaperone for Protein Refolding and Artificial Chaperone-Assisted Proteomics Technology,
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55. E. Yamamoto, S. Yamaguchi*, T. Nagamune*, Development of small molecular additives for protein refolding and proteomics technology,
J. Biosci. Bioeng., **108**, S108-S109, 2009.
56. S. Matsumoto, S. Yamaguchi, A. Wada, T. Matsui, M. Ikeda, I. Hamachi*, Photo-responsive gel droplet as a nano- or pico-liter container comprising a supramolecular hydrogel,
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57. S. Matsumoto, S. Yamaguchi, S. Ueno, H. Komatsu, M. Ikeda, K. Ishizuka, Y. Iko, K. V. Tabata, H. Aoki, S. Ito, H. Noji, I. Hamachi*, Photo gel-sol/sol-gel transition and its patterning of a supramolecular hydrogel as stimuli-respnsive biomaterials,
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58. S. Yamaguchi, S. Matsumoto, K. Ishizuka, Y. Iko, K. V. Tabata, H. Arata, H. Fujita, H. Noji, I. Hamachi*, Thermally responsive supramolecular nano-meshes for on/off switching of the rotary motion of F1-ATPase at a single molecular level,
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59. S. Yamaguchi, E. Yamamoto, S. Tsukiji, T. Nagamune*, Successful Control of the Aggregation and Folding Rates during Refolding of Denatured Lysozyme by adding N-Methylimidazolium Cations with Various N'-Substituents,
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60. E. Yamamoto, S. Yamaguchi*, T. Nagamune*, Effect of β-cyclodextrin on the renaturation of enzymes after sodium dodecyl sulfate-polyacrylamide gel electrophoresis,
Anal. Biochem., **381**, 273-275, 2008.
61. S. Yamaguchi, I. Yoshimura, T. Kohira, S.-I. Tamaru, I. Hamachi*, Cooperation between artificial receptors and supramolecular hydrogels for sensing and discriminating phosphate derivatives,
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65. S. Yamaguchi, T. Mannen, T. Zako, N. Kamiya, T. Nagamune*, Measuring adsorption of a hydrophobic probe with a surface plasmon resonance sensor to monitor conformational changes in immobilized proteins,
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J. Biosci. Bioeng., **91**, 403-408, 2001.
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Anal. Biochem., **293**, 185-193, 2001.
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J. Biochem., **129**, 1-4, 2000.

* Corresponding authors

【Review, Books】(only international)

1. S. Yamaguchi*, Recent Advances in Protein Caging Tools for Protein Photoactivation,
Appl. Sci., **12**, 3750, 2022.
2. S. Yamaguchi*, E. Yamamoto, T. Mannen, T. Nagamune*, Preparation of suitable conditions for protein refolding using chemical refolding additives,
Biotechnol. J., **8**, 17-31, 2013.
3. S. Yamaguchi, E. Matsunuma, T. Nagamune*, Immobilized culture and transfection microarray of non-adherent cells,
Cell-Based Microarrays, Methods in Molecular Biology 706 (E. Palmer ed.), Human Press, pp151-157, 2011.
4. S. Yamaguchi, I. Hamachi*, Multi-functional materials for nano-/micro biotechnology based on supramolecular hydrogels of glycosylated amino acetate derivatives.
Nanotechnology in Carbohydrate Chemistry, H. Yuasa (Editor), Chapter 3, 43-65, 2006.
5. T. Mannen, S. Yamaguchi, J. Honda, S. Sugimoto, A. Kitayama, T. Nagamune*, Monitoring structural changes of proteins on solid phase using surface plasmon resonance sensor,
Bioseparation Engineering, I. Endo, T. Nagamune, S. Katoh and T. Yonemoto(Editors), Elsevier Science B. V. All rights reserved., Chapter 2, 125-130, 1999.

【Patent applications】

1. Satoshi Yamaguchi, Takahiro Kosaka, Akimitsu Okamoto, Yuki Ohashi, Hiroaki Tateno
   "Manufacturing method for cell immobilization substrates",
   JP2022/076539
2. Satoshi Yamaguchi, Akimitsu Okamoto, Ryosuke Ikeda,
   "Methods for detecting cell-cell contact",
   JP2022/3617
3. Satoshi Yamaguchi, Shinya Yamahira, Takahiro Kosaka, Akimitsu Okamoto,
   "Methods for analyzing the activities of immune cells",
   JP2021/190522
4. Satoshi Yamaguchi, Renjiro Uehara, Akimitsu Okamoto,
   "Immobilization Reagents for Biomaterials",
   JP2019/222051
5. Satoshi Yamaguchi, Akimitsu Okamoto, Shin Izuta
   "Photo-Responsive Cell Immobilization Reagents",
   JP2018/105068
6. Satoshi Yamaguchi, Akimitsu Okamoto, Natalia Teresa Jarzębska, Shin Izuta, Shinya Yamahira, Teruyuki Nagamune
   "Photo-Cleavable Cell Immobilization Reagents",
   JP2017/214107
7. Satoshi Yamaguchi, Akimitsu Okamoto, Risa Takagi, Hiroyuki Noji, Ryota Iino, Kazuhito Tabata,
   "Cell Sorting Method, and Its Application to Flow Cytometry and Cell Sorter",
   JP2016/061233
8. Satoshi Yamaguchi, Akimitsu Okamoto, Wataru Urano,
   "Probe for Raman Spectroscopy and Its Application to imaging method",
   Patent 6607746 (JP2015/180191)
9. Satoshi Yamaguchi, Akimitsu Okamoto, Hidefumi Shiota,
   "Compound for Stabilizing Proteins",
   PCT/JP2016/076697
10. Teruyuki Nagamune, Satoshi Yamaguchi, Shinya Yamahira,
    "Compound for Fixing Lipid Membrane-Containing Composition, Base Material Modified by Compound, Method for Patterning Lipid Membrane-Containing Composition, Base Material, and Method for Isolating Lipid Membrane-Containing Composition on Base Material",
    Patent 6901714 (PCT/JP2016/057852)
11. Miyuki Murakami, Satoshi Yamaguchi, Teruyuki Nagamune, Kosuke Minamihata,
    "Localized Ultrasound Hyperthermia Intracavitary"
    PCT/JP2014/057134
12. Miyuki Murakami, Satoshi Yamaguchi, Teruyuki Nagamune, Yoshikazu Shibasaki, Mariko Iijima,
    "Contrast Medium, and Preparation Method and Preparation Kit Therefore",
    Patent 6278551 (PCT/JP2014/051311)

【Awards】(only international)

1. IBS2012 Organizing Committee Poster Award
   Light-induced regulation of gene expression using caged nucleotides with biotinylated photo-cleavable protection group,
   15th International Biotechnology Symposium and Exhibition (IBS2012)

【Invited Lectures】(only international)

1. Satoshi Yamaguchi,
   Photo-responsive Chemical Tools Working on Cell Surfaces,
   IGER International Symposium on Cell Surface Structures and Functions 2017, Nagoya, November 2017.
2. Satoshi Yamaguchi,
   Chemical tools working at bio-interfaces for Bioengineering,
   Asian Engineering Dean's Forum, Singapore, March 2017.
3. Satoshi Yamaguchi,
   Photo-cleavable chemical tools working at biointerfaces for externally controlling biomolecules and living cells,
   The First International Symposium on Biofunctional Chemistry (ISBC2012), Tokyo, Japan, November 2012.
4. Satoshi Yamaguchi,
   Artificial Chaperone Molecules and Matrices for Controlling the Folding and Aggregation of Refolding Intermediates,
   YONSEI U-U of TOKYO Joint Symposium, Seoul, Korea, August 2007.

【Grant funding】

1. Research Foundation for Opto-Science and Technology
   Grant for research (2023)
   3.0 million yen
2. Uehara Memorial Foundation
   Grant for research (2023)
   5.0 million yen
3. Japan Science for the Promotion of Science (JSPS)
   Grant-in-aid for Scientific Research (B) (2021-2023), Grant number: 21H01723
   13.5 million yen
4. Iketani Foundation for the Promotion of Sciences
   Grant for research (2021)
   1.5 million yen
5. Japan Science and Technology Agency (JST)
   MIRAI-Program (Small start Type) (2019-2021), Grant number: 19217334
   24.5 million yen
6. Japan Science for the Promotion of Science (JSPS)
   Grant-in-aid for Challenging Research (Exploratory) (2019-2021), Grant number: 19K22079
   5.0 million yen

7. The University of Tokyo
   GAP fund program (2018~2019)
   6.0 million yen
8. TOSOH Corporation
   Grant for collaboration research (2018~2019)
   2.0 million yen
9. Ishikawa Sunrise Industries Creation Organization (ISICO), Ishikawa Prefecture
   Grant-in-aid for creation of joint business (2018)
   0.7 million yen
10. Ministry of Agriculture, Forestry and Fisheries (MAFF), Japan
    Research Promotion Program for Science and Technology for Agriculture, Forestry and Fisheries Industry and the Food Production Industry (2018), Grant number: 28018B
    1.1 million yen
11. The Small and Medium Enterprise Agency, Japan
    Supporting Industry program (2017-2019), Grant number: 2931211007
    6.4 million yen
12. Saitama Prefecture
    Leading-edge project (2017)
    1.0 million yen
13. Japan Science and Technology Agency (JST)
    PRESTO (2016-2019), Grant number: 16815021
    42.1 million yen
14. Japan Science for the Promotion of Science (JSPS)
    Grant-in-aid for Scientific Research (C) (2015-2017), Grant number: 15K06575
    3.7 million yen
15. Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan
    Creation of Innovation Centers for Advanced Interdisciplinary Research Areas Program (2013-2016)
    13.4 million yen
16. Japan Science for the Promotion of Science (JSPS)
    Grant-in-aid for Young Scientists (A) (2012-2013), Grant number: 24686094
    18.9 million yen
17. Terumo Corporation
    Grant for collaboration research (2012)
    2.0 million yen
18. Japan Foundation for Applied Enzymology
    Grant for research (2012)
    1.0 million yen
19. Japan Bioindustry Association (JBA)
    Grant for Chemical Material Research (2011)
    0.5 million yen
20. Japan Science for the Promotion of Science (JSPS)
    Grant-in-aid for Challenging Exploratory Research (2011-2012), Grant number: 23656518
    3.9 million yen

21. Mizuho Foundation for the Promotion of Sciences
    Grant for engineering research (2009)
    2.0 million yen
22. Japan Science for the Promotion of Science (JSPS)
    Grant-in-aid for Young Scientists (B) (2009-2010), Grant number: 21760634
    4.9 million yen
23. Japan Science for the Promotion of Science (JSPS)
    Grant-in-aid for Young Scientists (B) (2007-2008), Grant number: 19760549
    3.8 million yen

【Academic Society】

Society for Chemical Engineers, Japan (SCEJ)
The Chemical Society of Japan (CSJ)
The Society for Biotechnology, Japan (CBJ)
The Society of Polymer Science, Japan (SPSJ)
Japanese Society of Enzyme Engineering