

## List of Publications

1. Yuyama, K.; Chang, K. -D.; Tu, J. -R.; Masuhara, H.; Sugiyama, T.\*, "Rapid localized crystallization of lysozyme by laser trapping", *Physical Chemistry Chemical Physics*, 20, 6034–6039 (2018)
2. Iwata, K.; Terazima, M.; Masuhara, H., "Novel physical chemistry approaches in biophysical researches with advanced application of lasers: Detection and manipulation", *Biochimica et Biophysica Acta (BBA) - General Subjects*, 1862, 335-357 (2018)
3. Chiang, W.-Y.; Usman, A.; Sugiyama, T.; Hofkens, J.; Masuhara, H., "Femtosecond laser trapping dynamics of nanoparticles: A single transient assembly formation leading to their directional ejection", *Journal of Physical Chemistry C*, in press (2018)
4. Niinomi, H.; Sugiyama, T.; Miyamoto K.; Omatsu T., "Freezing" of NaClO<sub>3</sub> metastable crystalline state by optical trapping in unsaturated microdroplet", *Crystal Growth & Design*, 18 (2), 734-741 (2018)
5. Niinomi, H.; Sugiyama, T.; Tagawa, M.; Maruyama, M.; Ujihara, T.; Omatsu, T.; Mori, Y., "Plasmonic heating-assisted laser-induced crystallization from a NaClO<sub>3</sub> unsaturated mother solution", *Crystal Growth & Design*, 17, 809-818 (2017)
6. Kittiravechote, A.; Usman, A.; Liao, I.; Masuhara, H., "Enhanced optical confinement of dielectric nanoparticles by two-photon resonance transition", *RSC Advances*, 7, 42606-42613 (2017)
7. Liu, T.-H.; Yuyama, K.; Hiramatsu, T.; Yamamoto, N.; Chatani, E.; Miyasaka, H.; Sugiyama, T.; Masuhara, H., "Femtosecond Laser-Enhanced Amyloid Fibril Formation of Insulin", *Langmuir*, 33, 8311-8318 (2017)
8. Yuyama, K.; Ueda, M.; Nagao, S.; Hirota, S.; Sugiyama, T.; Masuhara, H., "A Single Spherical Assembly of Protein Amyloid Fibrils Formed by Laser Trapping", *Angewandte Chemie International Edition*, 56, 6737-6743 (2017)
9. Uwada, T.; Wang, S. F.; Liu, T.-H.; Masuhara, H., "Preparation and micropatterning of gold nanoparticles by femtosecond laser-induced optical breakdown", *Journal of Photochemistry and Photobiology A: Chemistry*, 346, 177-186 (2017)
10. Kudo, T.; Ishihara, H.; Masuhara, H., "Resonance optical trapping of individual dye-doped polystyrene particles with blue- and

- red-detuned lasers”, *Optics Express*, 25, 4655-4664 (2017)
11. Uwada, T.; Huang, L.-T.; Hee, P.-Y.; Usman, A.; Masuhara, H., "Size-Dependent Optical Properties of Grana Inside Chloroplast of Plant Cells”, *Journal of Physical Chemistry B*, 121, 915-922 (2017)
  12. Yuyama, K.; Marcelis, L.; Su, P. M.; Chung, W.-S.; Masuhara, H., "Photocontrolled Supramolecular Assembling of Azobenzene-Based Biscalix[4]arenes upon Starting and Stopping Laser Trapping”, *Langmuir*, 33, 3, 755-763 (2017)
  13. Kudo, T.; Wang, S. F.; Yuyama, K.; Masuhara, H., "Light propagation in optical trapping assembling of colloidal particles at an interface”, *Proceedings of The SPIE*, 9922, 99221R (2016)
  14. Wang, S.-F.; Yuyama, K.; Kudo, T.; Sugiyama, T.; Masuhara, H., "Optically evolved assembly formation in laser trapping of polystyrene nanoparticles at solution surface”, *Langmuir*, 32, 47, 12488–12496 (2016)
  15. Okano, K.; Hsu, H.-Y.; Li, Y.-K.; Masuhara, H., "In situ patterning and controlling living cells by utilizing femtosecond laser”, *Journal of Photochemistry and Photobiology C: Photochemistry Reviews*, 2016, 28, 1-28 (2016)
  16. Murshid, N.; Yuyama, K.; Wu, S.-L.; Wu, K.-Y.; Masuhara, H.; Wang, C.-L.; Wang X.-S., "Highly-integrated, laser manipulable aqueous metal carbonyl vesicles (MCsomes) with aggregation-induced emission (AIE) and aggregation-enhanced IR absorption (AEIRA)”, *Journal of Materials Chemistry C*, 4, 5231-5240 (2016)
  17. Kudo, T.; Wang, S.-F.; Yuyama, K.; Masuhara, H., "Optical Trapping-Formed Colloidal Assembly with Horns Extended to the Outside of a Focus through Light Propagation”, *Nano Letters*, 16, 3058-3062 (2016)
  18. Muramatsu, M.; Shen, T.-F.; Chiang, W.-Y.; Usman, A.; Masuhara, H., "Picosecond Motional Relaxation of Nanoparticles in Femtosecond Laser Trapping”, *Journal of Physical Chemistry C*, 120, 5251-5256 (2016)
  19. Liu, T.-H.; Chiang, W.-Y.; Usman, A.; Masuhara, H., "Optical Trapping Dynamics of a Single Polystyrene Sphere: Continuous Wave versus Femtosecond Lasers”, *Journal of Physical Chemistry C*, 120, 2392-2399 (2016)
  20. Yuyama, K.; George, J.; Thomas, K. G.; Sugiyama, T.; Masuhara, H., "Two-Dimensional Growth Rate Control of L-Phenylalanine Crystal by Laser Trapping in Unsaturated Aqueous Solution”, *Crystal Growth*

- & Design, 16, 953-960 (2016)
21. Wang, S.-F.; Yuyama, K.; Sugiyama, T.; Masuhara, H., "Reflection Microspectroscopic Study of Laser Trapping Assembling of Polystyrene Nanoparticles at Air/Solution Interface", *J. Phys. Chem. C*, 120, 15578–15585 (2016)
  22. Niinomi, H., Sugiyama, T., Tagawa, M., Murayama, K., Harada S., Ujihara T., "Enantioselective amplification on circularly polarized laser-induced chiral nucleation from a NaClO<sub>3</sub> solution containing Ag nanoparticles", *CrystEngComm*, 18, 7441-7448 (2016)
  23. Hamada, M.; Yuyama, K.; Masuhara, H.; Nakanishi, S.; Biju, V. P., "Photoluminescence Enhancement and Spectral Fluctuations of CdSe/ZnS Quantum Dots in Solutions and at Interfaces: From Single-molecule Studies to the Construction of Self-assembled Nanostructures", *Proceedings of International Conference on Materials for the Millennium*, PL22, 60-63 (2016)
  24. Okano, K.; Liu, L.-L.; Hosokawa, Y.; Masuhara, H., "In situ dynamic control of neurite growth by femtosecond laser ablation of substrate patterns", *Micro-Nano Mechatronics and Human Science*, 263-266 (2016)
  25. Masuhara, H., "Exploratory Research on Time- and Space-resolved Spectroscopy and Chemistry", *Chemical Record*, 2015, 15, 1153-1155 (2015)
  26. Tu, J.-R.; Yuyama, K; Masuhara, H.; Sugiyama, T. "Dynamics and Mechanism of Laser Trapping-Induced Crystal Growth of Hen Egg White Lysozyme", *Crystal Growth & Design*, 15, 4760-4767 (2015)
  27. Wang, S.-F.; Yuyama, K.; Sugiyama, T.; Masuhara, H., "Laser trapping and assembling of nanoparticles at solution surface studied by reflection micro-spectroscopy", *Proceedings of The SPIE*, 9548, 954821-1-954821-6 (2015)
  28. Masuhara, H.; Sugiyama, T.; Yuyama, K.; Usman, A., "Optical trapping assembling of clusters and nanoparticles in solution by CW and femtosecond lasers", *Optical Review*, 22, 143-148 (2015)
  29. Okano, K.; Wang, C.-H.; Liao, I., "Ablation of targeted cardiomyocyte in zebrafish larvae utilizing femtosecond laser", 2015 Conference on Lasers and Electro-Optics/Pacific Rim, 25H3\_5 (2015)
  30. Yoshikawa, H. Y.; Murai R.; Adachi H.; Sugiyama, S.; Maruyama, M.; Takahashi, Y.; Takano, K.; Matsumura, H.; Inoue, T.; Murakami, S.; Masuhara, H.; Mori, Y., "Laser ablation for protein crystal nucleation and seeding", *Chemical Society Reviews*, 43, 2147-2158 (2014)

31. Tu, T.-R.; Miura, A.; Yuyama, K.; Masuhara, H.; Sugiyama, T., "Crystal growth of lysozyme controlled by laser trapping", *Crystal Growth & Design*, 14, 15-22 (2014)
32. Chiang, W. -Y.; Okuhata, T.; Tamai, N.; Masuhara, H., "Efficient optical trapping of CdTe quantum dots by femtosecond laser pulses", *Journal of Physical Chemistry B*, 118, 14010–14016 (2014)
33. Kittiravechote, A.; Chiang, W.-Y.; Usman, A.; Liau, I.; Masuhara, H., "Enhanced optical confinement of dye-doped dielectric nanoparticles using a picosecond-pulsed near-infrared laser", *Laser Physics Letters*, 11, 076001 (2014)
34. Yuyama, K.; Wu, C.-S.; Sugiyama, T.; Masuhara, H., "Laser trapping-induced crystallization of L-phenylalanine through its high concentration domain formation", *Photochemical & Photobiological Sciences*, 13, 254-260 (2014)
35. Deka, G.; Okano, K.; Wu, W.-W.; Kao, F.-J., "Multiphoton microscopy for skin wound healing study in terms of cellular metabolism and collagen regeneration ", *Proceeding of SPIE*, 8948, 894820 (2014)
36. Deka, G.; Okano, K.; Kao, F.-J., "Dynamic photopatterning of cells in situ by Q-switched neodymium-doped yttrium ortho-vanadate laser", *Journal of Biomedical Optics*, 19, 011012 (2014)
37. Deka, G.; Okano, K.; Masuhara, H.; Li, Y.-K.; Kao, F.-J., "Metabolic variation of HeLa cells migrating on microfabricated cytophilic channels studied by the fluorescence lifetime of NADH", *RSC Advances*, 4, 44100-44104 (2014)
38. Miura, A.; Huang, Y.-H.; Masuhara, H., "Single crystal formation of amino acid with high temporal controllability by combining femtosecond and continuous wave laser trapping", *Applied Physics B*, 112, 473-477 (2013)
39. Masuhara, H., "Time-resolved spectroscopic and imaging studies on laser ablation of molecular systems: From mechanistic study to bio/nano applications", *Bulletin of the Chemical Society of Japan*, 86, 755-783 (2013)
40. Liu, T.-H.; Uwada, T.; Sugiyama, T.; Usman, A.; Hosokawa, Y.; Masuhara, H.; Chiang, T.-W.; Chen, C.-J., "Single femtosecond laser pulse-single crystal formation of glycine at the solution surface", *Journal of Crystal Growth*, 366, 101-106 (2013)
41. Usman, A.; Chiang, W.-Y.; Uwada, T.; Masuhara, H., "Polarization and droplet size effects in the laser trapping-induced reconfiguration in individual nematic liquid crystal micro-droplets", *Journal of*

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42. Chiang, W.-Y.; Usman, A.; Masuhara, H., “Femtosecond pulse-width dependent trapping and directional fjection dynamics of dielectric nanoparticles”, *Journal of Physical Chemistry C*, 117, 19182-19188 (2013)
  43. Yuyama, K.; Sugiyama, T.; Masuhara, H., “Laser Trapping and Crystallization Dynamics of L-Phenylalanine at Solution Surface”, *Journal of Physical Chemistry Letters*, 4, 2436-2440 (2013)
  44. Okano, K.; Matsui, A.; Maezawa, Y.; Hee, P.-Y.; Matsubara, M.; Hosokawa, Y.; Yamamoto, H.; Tsubokawa, H.; Li, Y.-K.; Kao, F.-J.; Masuhara, H., “In situ laser micropatterning of proteins for dynamically arranging living cells”, *Lab on a Chip*, 13, 4078-4086 (2013)
  45. Yuyama, K.; Sugiyama, T.; Masuhara, H., “Laser trapping dynamics of 200 nm-polystyrene particles at a solution surface”, *Proceedings of The SPIE*, 8810, 88101V\_1-7 (2013)
  46. Hee, P. -Y.; Uwada, T.; Okano, K.; Miura, A.; Masuhara, H., “Rayleigh scattering correlation spectroscopy on diffusion dynamics of nanoparticles under intense laser irradiation”, *Proceedings of The SPIE*, 8810, 88102T\_1-12 (2013)
  47. Usman, A.; Chiang, W.-Y.; Masuhara, H., “Optical trapping of nanoparticles by ultrashort laser pulses”, *Science Progress*, 96, 1-18 (2013)
  48. Okano, K.; Matsui, A.; Maezawa, Y.; Matsubara, M.; Hosokawa, Y.; Tsubokawa, H.; Kao, F.-J.; Li, Y.-K.; Masuhara, H., "Laser-assisted control of protein adsorption for dynamically arranging viable cells", 2013 Conference on Lasers and Electro-Optics/Pacific Rim, Optical Society of America, 2013 Conference on, WPJ-9 (2013)
  49. Sugiyama, T.; Yuyama, K.; Masuhara, H., “Laser trapping chemistry: From polymer assembling to amino acid crystallization”, *Accounts of Chemical Research*, 45, 1946-1954 (2012)
  50. Uwada, T.; Fujii, S.; Sugiyama, T.; Usman, A.; Miura, A.; Masuhara, H.; Kanaizuka, K.; Haga, M., “Glycine crystallization in solution by cw laser-induced microbubble on gold thin film surface”, *ACS Applied Materials & Interfaces*, 4, 1158-1163 (2012)
  51. Yuyama, K.; Rungsimanon, T.; Sugiyama, T.; Masuhara, H., “Selective fabrication of  $\alpha$ - and  $\gamma$ -polymorphs of glycine by intense polarized continuous wave laser beams”, *Crystal Growth & Design*, 12, 2427-2434 (2012)

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53. Usman, A.; Chiang, W.-Y.; Masuhara, H., "Optical trapping and polarization-controlled scattering of dielectric spherical nanoparticles by femtosecond laser pulses", *Journal of Photochemistry and Photobiology A: Chemistry*, 234, 83-90 (2012)
54. Yuyama, K.; Rungsimanon, T.; Sugiyama, T.; Masuhara, H., "Formation, dissolution, and transfer dynamics of a millimeter-scale thin liquid droplet in glycine solution by laser trapping", *Journal of Physical Chemistry C*, 116, 6809-6816 (2012)
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56. Usman, A.; Chiang, W.-Y.; Masuhara, H., "Femtosecond trapping efficiency enhanced for nano-sized silica spheres", *Proceedings of The SPIE*, 8458, 845833 (2012)
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58. Usman, A.; Chiang, W.-Y.; Uwada, T.; Masuhara, H., "Laser trapping-induced reconfiguration of individual smectic liquid crystal micro-droplet showing size-dependent dynamics", *Proceedings of The SPIE*, 82740, 82740L (2012)
59. Werner, D.; Hashimoto, S.; Uwada, T., "Studies on the Interaction of Pulsed Lasers with Plasmonic Gold Nanoparticles toward Light Manipulation, Heat Management, and Nanofabrication", *J. Photochem. Photobiol. C*, 13, 28-54 (2012)
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63. Okano, K.; Yu, D.; Matsui, A.; Maezawa, Y.; Hosokawa, Y.; Kira, A.; Matsubara, M.; Liau, I.; Tsubokawa, H.; Masuhara, H., “Induction of cell-cell connections by using in situ laser lithography on a perfluoroalkyl-coated cultivation platform”, *ChemBioChem*, 12, 795-801 (2011)
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65. Uwada, T.; Sugiyama, T.; Masuhara, H., “Wide-field Rayleigh scattering imaging and spectroscopy of gold nanoparticles in heavy water under laser trapping”, *Journal of Photochemistry and Photobiology A: Chemistry*, 221, 187-193 (2011)
66. Usman, A.; Uwada, T.; Masuhara, H., “Optical reorientation and trapping of nematic liquid crystals leading to the formation of micrometer-sized domain”, *Journal of Physical Chemistry C*, 115, 11906-11913 (2011)
67. Ito, S.; Tanaka, Y.; Yoshikawa, H.; Ishibashi, Y.; Miyasaka, H.; Masuhara, H., “Confinement of photopolymerization and solidification with radiation pressure”, *Journal of the American Chemical Society*, 133, 14472-14475 (2011)
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73. Yuyama, K.; Sugiyama, T.; Asahi, T.; Ryo, S.; Oh, I.; Masuhara, H., “Nanoparticle preparation of quinacridone and beta-carotene using near-infrared laser ablation of their crystals”, *Applied Physics A-Materials Science & Processing*, 101, 591-596 (2010)
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75. Usman, A.; Asahi, T.; Sugiyama, T.; Masuhara, H.; Tohnai, N.; Miyata, M., “Photochemical reaction of p-hydroxycinnamic-thiophenyl ester in the microcrystalline state”, *Journal of Physical Chemistry B*, 114, 14233-14240 (2010)
76. Rungsimanon, T.; Yuyama, K.; Sugiyama, T.; Masuhara, H.; Tohnai, N.; Miyata, M., “Control of crystal polymorph of glycine by photon pressure of a focused continuous wave near-infrared laser beam”, *Journal of Physical Chemistry Letters*, 1, 599-603 (2010)
77. Yuyama, K.; Sugiyama, T.; Masuhara, H., “Millimeter-scale dense liquid droplet formation and crystallization in glycine solution induced by photon pressure”, *Journal of Physical Chemistry Letters*, 1, 1321-1325 (2010)
78. Tada, T.; Masuhara, H., “Nanometer-nanosecond dynamics in laser-induced expansion/contraction and ablation of polymer films”, *Journal of the Indian Chemical Society*, 87, 65-83 (2010)
79. Jiang, Y.; Ma, C.; Oh, I.; Hosokawa, Y.; Masuhara, H., “Secondary convergence in femtosecond laser trapping”, *Modern Physics Letters B*, 24, 1739-1746 (2010)
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  84. Kira, A.; Okano, K.; Hosokawa, Y.; Naito, A.; Fuwa, K.; Yuyama, J.; Masuhara, H., "Micropatterning of perfluoroalkyl self-assembled monolayers for arraying proteins and cells on chips", *Applied Surface Science*, 255, 7647-7651 (2009)
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  86. Zhou, Y.; Kajiyama, S.; Masuhara, H.; Hosokawa, Y.; Kaji, T.; Fukui, K., "A new size and shape controlling method for producing calcium alginate beads with immobilized proteins", *Journal of Biomedical Science & Engineering*, 2, 287-293 (2009)
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  90. Kira, A.; Okano, K.; Hosokawa, Y.; Fuwa, K.; Yuyama, J.; Naito, A.; Masuhara, H., "Array arrangement of living cells on self-assembled-monolayer pattern chip with femtosecond laser inducing mechanical force "micro tsunami"", *Micro-NanoMechatronics and Human Science*, 387-391 (2009)

91. Jeon, K.-S.; Oh, S.-D.; Suh, Y. D.; Yoshikawa, H.; Masuhara, H.; Yoon, M., "Blinking photoluminescence properties of single TiO<sub>2</sub> nanodiscs: Interfacial electron transfer dynamics", *Physical Chemistry Chemical Physics*, 11, 534-542 (2009)
92. Okano, K.; Maezawa, Y.; Hosokawa, Y.; Kira, A.; Matsubara, M.; Masuhara, H., "In-situ arrangement of living cells on a fabricated surface by femtosecond laser", *Proceedings of Micro Total Analysis Systems 2009*, 1249-1251 (2009)
93. Hashimoto, S.; Uwada, T.; Hagiri, M.; Takai, H.; Ueki, T., "Gold nanoparticle-assisted laser surface modification of borosilicate glass substrates", *J. Phys. Chem. C*, 2009, 113, 20640-20647 (2009)
94. Spangenberg, A.; Metivier, R.; Gonzalez, J.; Nakatani, K.; Yu, P.; Giraud, M.; Leautic, A.; Guillot, R.; Uwada, T.; Asahi, T.; "Multiscale Approach of Photochromism: Synthesis and Photochromic Properties of a Diarylethene in Solution, in Nanoparticles, and in Bulk Crystals", *Adv. Mat.*, 21, 309-313 (2009)
95. Asahi, T.; Uwada, T.; Louit, G.; Masuhara, H., "Single particle spectroscopy and tracking of gold nanospheres in living cells by confocal light scattering microscopy", *2008 Digest of the IEEE/LEOS Summer Topical Meetings*, 67-68 (2008)
96. Asahi, T.; Sugiyama, T.; Masuhara, H., "Laser fabrication and spectroscopy of organic nanoparticles", *Accounts of Chemical Research*, 41, 1790-1798 (2008)
97. Yasukuni, R.; Asahi, T.; Sugiyama, T.; Masuhara, H.; Sliwa, M.; Hofkens, J.; De Schryver, F. C.; Van der Auweraer, M.; Herrmann, A.; Muellen, K., "Fabrication of fluorescent nanoparticles of dendronized perylene diimide by laser ablation in water", *Applied Physics A-Materials Science & Processing*, 93, 5-9 (2008)
98. Hashimoto, S.; Uwada, T.; Masuhara, H.; Asahi, T., "Fabrication of gold nanoparticle-doped zeolite L crystals and characterization by optical microscopy: Laser ablation- and crystallization inclusion-based approach", *Journal of Physical Chemistry C*, 112, 15089-15093 (2008)



## List of Invited Talks

1. Colloquium of Katholieke Universiteit Leuven for Honorary doctorate for Professor Thomas Ebbesen, Invited  
Leuven, Belgium, February. 1, 2018.  
“Optical trapping and assembling of molecules and nanoparticles”  
Hiroshi Masuhara
2. Symposium on Nano-Material Manipulation and Structural Order Control with Optical Forces, Plenary  
Osaka, Japan, January. 22, 2018.  
“Photochemistry, Photoscience and Science of “Photon Pressure”  
Hiroshi Masuhara
3. International Conference of Applied Sciences 2018, Plenary  
Taipei, Taiwan, January. 9, 2018.  
“Laser Trapping Dynamics and Chemistry”  
Hiroshi Masuhara
4. 1st Workshop of Australian Research Council Excellence of Science in Exciton Science, Plenary  
Melbourne, Australia, December 11, 2017  
“My Exciton Science, Related Projects in Japan, and University Globalization in Taiwan”  
Hiroshi Masuhara
5. 2017 The 5th Solid-State Physics Seminar at Osaka University, Invited  
Osaka, Japan, December 19, 2017  
“Collective motion of the nanoparticles under laser trapping”  
Tetsuhiro Kudo
6. Toyota Riken International Workshop on Chirality in Soft Matter, Invited  
Nagoya, Japan, November 26, 2017  
“Crystallization and Enantiomorphism Controlled by Optical Trapping”  
Teruki Sugiyama
7. 2017 Taiwan-Israel Bilateral Workshop on Optofluidics and Electrokinetics, Invited  
Hsinchu, Taiwan, November 9, 2017  
“Optical Trapping Dynamics of Nanoparticles by CW and Femtosecond Lasers”  
Hiroshi Masuhara

8. Asian spectroscopy conference 2017, Invited  
Hsinchu, Taiwan, September 4, 2017  
"Laser Trapping Dynamics and Chemistry Utilizing Spectroscopy"  
Teruki Sugiyama
9. The 64th JSAP Spring Meeting, 2016 (The Japan Society of Applied Physics), Invited  
Yokohama, Japan, March 14, 2017  
"Assembly formation dynamics of nanoparticles based on interplay of optical trapping and light propagation/light scattering"  
Tetsuhiro Kudo
10. Symposium on Surface Science & Nanotechnology -25th Anniversary of SSSJ Kansai- (SSSN-Kansai), invited  
Kyoto, Japan, January 25, 2017  
"Nanoparticle assembling and molecular crystallization at solution surface by laser trapping"  
Teruki Sugiyama
11. 9th Asian and Oceanian Photochemistry Conference (APC2016), invited  
Singapore, Singapore, December 8, 2016  
"Laser Trapping-Induced Crystallization: From Amino Acid to Protein"  
Teruki Sugiyama
12. 1st International Symposium on PhotoSynergetics, Invited  
Osaka, Japan, June 2, 2016  
"What to expect from this research group: Laser Trapping Chemistry",  
Hiroshi Masuhara
13. Public Lecture at Universiti Brunei Darussalam, Invited  
Brunei, May 19, 2016  
"Photon Science & Technology and Molecular Systems (1)"  
Hiroshi Masuhara
14. 251th National ACS Meeting, Physical Principles in Functional Nanoscience: Symposium in Honor of Mostafa A. El-Sayed, Invited  
San Diego, USA, March 16, 2016  
"Laser Trapping Assembling and Crystallization of Nanoparticles at Solution Surface"  
Hiroshi Masuhara, Ken-ichi Yuyama, Masayasu Muramatsu, Teruki Sugiyama
15. Invited Seminar at Katholieke Universiteit Leuven  
Leuven, Belgium, September 13, 2016  
"Advances in Laser Trapping Chemistry and Spectroscopy"

- Hiroshi Masuhara  
16. France-Japan Bilateral Workshop; Toward an international laboratory between France & Japan on Photochemistry, Invited  
Tokyo, Japan, April 1, 2016  
"Laser Trapping Chemistry"  
Hiroshi Masuhara
17. International Conference on Materials for the Millennium, Invited  
Kochi, India, January 15, 2016  
"Photoluminescence Enhancement and Spectral Fluctuations of CdSe/ZnS Quantum Dots in Solutions and at Interfaces: From Single-molecule Studies to the Construction of Self-assembled Nanostructures"  
Morihiko Hamada, Ken-ichi Yuyama, Hiroshi Masuhara, Shinsuke Nakanishi, Vasudevan Pillai Biju
18. International Conference on Photochemistry (ICP2015), Invited  
Jeju, Korea, July 1, 2015  
"Laser Trapping Dynamics and Mechanism of Molecular Clusters and Nanoparticles in Solution"  
Hiroshi Masuhara, Teruki Sugiyama, Ken-ichi Yuyama, Jing-Ru Tu, Shun-Fa Wang, Shimpei Nishimura
19. 2nd International Symposium on Plant Environmental Sensing, Invited  
Tokyo, Japan, March 15, 2015  
"Laser-induced Phenomena and Their Applications to Bio/Nano Science"  
Hiroshi Masuhara
20. 18th Osaka City University International Conference (OCUIC 2015), Invited  
Osaka, Japan, March 9, 2015  
"Control of protein crystallization using laser trapping"  
Teruki Sugiyama
21. JSPS Grant - in - Aid for Scientific Research on Innovative Areas: "Application of Cooperative-Excitation into Innovative Molecular Systems with High-Order Photofunctions " The 2nd International Symposium, Invited  
Osaka, Japan, January 23, 2015  
"Photon Science & Technology and Photochemistry"  
Hiroshi Masuhara
22. The 10th SPSJ International Polymer Conference (IPC2014),

- Keynote  
Tsukuba, Japan, December 2, 2014  
“Photon Science& Technology and Polymers”  
Hiroshi Masuhara
23. The 1st International Symposium on Interactive Materials Science  
Cadet Program of Graduate School of Engineering Science, Keynote  
Osaka, Japan, November 19, 2014  
“Laser Trapping Assembling Dynamics of Molecules and  
Nanoparticles”  
Hiroshi Masuhara
24. Collaborative Conference on Crystal Growth 2014, Invited  
Phuket, Thailand, November 5, 2014  
“Crystallization and crystal growth of lysozyme induced by laser  
trapping”  
Teruki Sugiyama
25. Collaborative Conference on Crystal Growth 2014, Invited  
Phuket, Thailand, November 4-7, 2014  
“Control of Crystal Growth of L-Phenylalanine by Optical Trapping”  
Ken-ichi Yuyama
26. Invited Seminar at Georgia Institute of Technology  
Atlanta, USA, October 23, 2014  
“Laser Trapping Assembling Dynamics of Molecules and  
Nanoparticles”  
Hiroshi Masuhara
27. Invited Seminar at Ecole Normale Superier Cachan  
Cachan, France, September 23, 2014  
“Laser Trapping Assembling Dynamics of Molecules and  
Nanoparticles”  
Hiroshi Masuhara
28. Puli Lecture at National Chi Nan University, Invited  
Puli, Taiwan, June 20, 2014  
“New Chemistry by Laser Trapping”  
Hiroshi Masuhara
29. The Second RIKEN-NCTU Symposium on Physical and Chemical  
Sciences, Invited  
Wako, Japan, June 5, 2014  
“Laser trapping study toward molecular science”  
Hiroshi Masuhara
30. 1st Optical Manipulation Conference (OMC'14), Optical manipulation

- and its satellite topics, Plenary  
Yokohama, Japan, April 22, 2014  
“Laser Trapping Assembling of Clusters and Nanoparticles”  
Hiroshi Masuhara
31. Invited Seminar at Chiba University  
Chiba, Japan, April 21, 2014  
“Laser trapping-induced phase transition of molecules, polymers,  
and nanoparticles in solution”  
Hiroshi Masuhara, Teruki Sugiyama, Ken-ichi Yuyama
32. Invited Seminar at Rice University,  
Houston, USA, February 3, 2014  
“Laser trapping dynamics of molecular clusters and nanoparticles in  
solution”  
Hiroshi Masuhara, T. Sugiyama, K. Yuyama, A. Usman
33. SPIE Photonics West (8983-19), Plenary  
San Francisco, USA, February 4, 2014  
“Laser trapping studies toward fabrication of organic materials and  
devices”  
Hiroshi Masuhara, T. Sugiyama, K. Yuyama, A. Usman
34. Symposium on Functional Nanostructures/Symposium Honoring the  
60th Birthday of Prof. Thomas W. Ebbesen, Invited  
Strasbourg, France, January 31, 2014  
“Laser trapping, assembling and crystallization of nanoparticles and  
amino acid clusters in solution”  
Hiroshi Masuhara
35. JSPS Grant - in - Aid for Scientific Research on Innovative Areas:  
"Dynamical ordering of biomolecular systems for creation of  
integrated functions" The 2nd International Symposium, Invited  
Kyoto, Japan, January 12, 2014  
“A millimeter-sized assembly of amino acids in solution formed by  
laser trapping”  
Hiroshi Masuhara
36. CNRS Bronze Medal Scientific Symposium, Invited  
Lille, France, November 5, 2013  
“Laser Trapping in Chemistry and Material Science”  
Hiroshi Masuhara
37. The First MPI-NCTU Joint Symposium on Correlated Materials, Thin  
Films and Chemical Physics of Solid, Invited  
Hsinchu, Taiwan



- “Laser Trapping and Crystallization Dynamics at Solution Interface/Surface”  
Hiroshi Masuhara, Teruki Sugiyama, Ken-ichi Yuyama
38. Invited Seminar at Katholieke Universiteit Leuven  
Leuven, Belgium, September 17, 2013  
“Laser Trapping and Crystallization Dynamics at Solution Surface and Interface”  
Hiroshi Masuhara
39. 2013 Fall Symposium of Photochemistry Association in Taiwan, Keynote  
Danshui, Taiwan, September 6, 2013  
“Cooperative Photochemical Reaction of Molecular Solids and Its Evolution to Their Morphological Changes”  
Hiroshi Masuhara
40. 2013 SPIE Optics+Photonics Conference 8810 Optical Trapping and Optical Manipulation X, Oral  
San Diego, USA, August 29, 2013  
“Femtosecond Optical Trapping of Dielectric Nanospheres: Three Dimensional Mapping of Their Directional Ejection”  
Wei-Yi Chiang, Anwar Usman, Hiroshi Masuhara
41. Invited seminar at Toyo University  
Kawagoe and Itakura, Japan, July 4, 2013  
“In situ laser micropatterning of proteins for dynamically arranging living cells”  
Kazunori Okano
42. 5th International Symposium on Optical Tweezers in Life Sciences, Invited  
Berlin, Germany, June 18, 2013  
“Laser Trapping and Crystallization Dynamics of Biomolecules and Nanoparticles”  
Hiroshi Masuhara
43. 11<sup>th</sup> International Symposium on Functional  $\pi$ -electron systems, Invited  
Arcachon, France, June 2, 2013  
“Laser Trapping in Chemistry and Materials Science”  
Hiroshi Masuhara
44. Organic Electronics Summer School, Invited  
Barritz, France, May 28, 2013  
“Laser fabrication and single particle spectroscopy of organic

- nanoparticles”  
Hiroshi Masuhara
45. Invited Seminar at Department of Chemistry, National Taiwan University,  
Taipei, Taiwan, May 9, 2013  
“Laser Trapping in Chemistry and Material Science”  
Hiroshi Masuhara
46. Invited Seminar at Department of Chemical Engineering, National Cheng Kung University  
Tainan, Taiwan, 19 April 2013  
“Laser Trapping in Chemistry and Material Science”  
Hiroshi Masuhara
47. 5th European Conference on Applications of Femtosecond Lasers in Materials Science (FemtoMat 2013), Invited  
Mauterndorf, Austria, March 18, 2013  
“Laser Trapping Assembly, Scattering, and Crystallization by CW and Femtosecond Lasers”  
Hiroshi Masuhara, Teruki Sugiyama, Ken-ichi Yuyama, and Anwar Usman
48. Annual Meeting of Physical Society of Republic of China, Invited  
Hualien, Taiwan, January 31, 2013  
“Optical Trapping of Nanoparticles by Femtosecond Laser Pulses”  
Hiroshi Masuhara
49. Invited Seminar at National Dong Hwa University  
Hualien, Taiwan, December 18, 2012  
“Laser assembling, scattering, and crystallization of nanoparticles and molecules in solution”  
Hiroshi Masuhara
50. Japan-India Bilateral Seminar on Supramolecular Nanomaterials for Energy Innovation, Invited  
Takamatsu, Japan, October 15-16, 2012  
“Laser Trapping Chemistry”  
Hiroshi Masuhara, T. Sugiyama, K. Yuyama, A. Usman, and W. Y. Chiang
51. RCAS-TNNA Symposium, Invited  
Taipei, Taiwan, October 5, 2012  
“Laser trapping chemistry: From polymer assembling to amino acid crystallization”  
Hiroshi Masuhara, Teruki Sugiyama, Ken-ichi Yuyama

52. Department Seminar at National Yang Ming University, Invited  
Taipei, Taiwan, October, 1 2012  
“Laser trapping chemistry: From polymer assembling to amino acid crystallization”  
Hiroshi Masuhara
53. XXIV IUPAC Symposium on Photochemistry, Oral  
Coimbra, Portugal, July 15, 2012  
“Laser trapping crystallization of glycine and its polymorph control”  
Hiroshi Masuhara, Teruki Sugiyama, Ken-ichi Yuyama
54. Solvay Colloquium at Universrsité Libre de Bruruxelles, Invited  
Brussels, Belgium, May 8, 2012  
“Laser light can crystallize amino acids and proteins in solution”  
Hiroshi Masuhara
55. 3rd AIST-ANNA Seminar on Nanoparticles & Single Molecules, Invited  
Takamatsu, Japan, February 17, 2012  
“Laser Trapping Chemistry on Nanoparticle Assembling and Phase Transition”  
Hiroshi Masuhara
56. RCAS-ANNA International Symposium, Invited  
Taipei, Taiwan, November 17, 2011  
“Molecular Trapping Phenomena by CW and Femtosecond Laser Irradiation”  
Hiroshi Masuhara, T. Uwada, A. Usman, K. Yuyama, T. Sugiyama
57. International Scientific Instrument Technology Workshop, Invited  
Hsinchu, Taiwan, October 24, 2011  
“Femtosecond Laser Fabrication and Manipulation in Bio/Nano Science”  
Hiroshi Masuhara
58. The 2nd International Symposium on Recent Advances in Applied Sciences, Invited  
Hualien, Taiwan, October 3, 2011  
“Radiation pressure chemistry: Confinement of polymerization and solidification by a focused laser beam”  
Hiroshi Masuhara
59. 242nd ACS National Meeting & Exposition, Invited  
Denver, USA, August 30, 2011  
“Assembling and crystallization of amino acids and proteins by intense laser irradiation in solution”

- Hiroshi Masuhara, Teruki Sugiyama, Ken-ichi Yuyama, Takayuki Uwada, and Atsushi Miura
60. The 25th International Conference on Photochemistry, Invited  
Beijing, P. R. China, August 7-12, 2011  
“Laser trapping dynamics of gold nanoparticles probed by wide-field light scattering spectroscopic imaging”  
Hiroshi Masuhara, Takayuki Uwada, Teruki Sugiyama
61. International Workshop on Nanoplasmonics for Energy and the Environment, Invited  
Vigo, Spain, June 10, 2011  
“Laser trapping and wide-field Rayleigh scattering imaging of gold nanoparticles in solution”  
Hiroshi Masuhara, Takayuki Uwada
62. Invited Seminar at Ecole Normale Superier Paris  
Paris, France, June 6, 2011  
“Laser-induced Crystallization and Crystal Growth”  
Hiroshi Masuhara
63. The 2nd Taiwan-Japan Symposium on Nanomedicine, Invited  
Taipei, Taiwan, February 24, 2011  
“Living cell manipulation, nanoparticle preparation, and molecular crystallization by lasers”  
Hiroshi Masuhara
64. Japan-Taiwan joint workshop: Future Perspective on NanoBio Science Pioneered by Light, Invited  
Hsinchu, Taiwan, October 2011  
“Tightly focused laser induced trapping, migration, assembling, and fabrication of gold nanoparticles under optical microscope”  
Takayuki Uwada
65. 2011 台灣光化學小組研討會議, Invited  
Taipei, Taiwan, September 2011  
“聚焦雷射誘發結晶和奈米粒子的形成”  
Takayuki Uwada
66. 6th Asian Photochemistry Conference, Award Lecture  
Auckland, New Zealand, November 15, 2010  
“An exploratory study with lasers: From nanosecond laser photolysis to laser trapping crystallization”  
Hiroshi Masuhara
67. 3rd Nanotechnology International Forum, Invited  
Moscow, Russia, November 1-3. 2010

- Laser Nanoscience and Nanotechnology in View of Materials  
Hiroshi Masuhara
68. International Scientific Instrument Technology Workshop  
Instrument Technology Research Center, National Applied Research  
Laboratories  
Hsinchu, Taiwan, October 25, 2010  
“Laser Fabrication and Microspectroscopy of Organic Nanoparticles”  
Hiroshi Masuhara
69. 2010 The International Conference on Green Technologies, Keynote  
Pingtung, Taiwan, October 6, 2010  
“Laser and Organic Nanoparticles: From Nano to Real Worlds”  
Hiroshi Masuhara
70. Third Asia Pacific Symposium on Radiation Chemistry (APSRC  
2010) and DAE-BRNS Tenth Biennial Trombay Symposium on  
Radiation & Photochemistry (TSRP2010), Invited  
Lonavala, India, September 15, 2010  
“Laser is opening a new horizon in molecular crystallization studies”  
Hiroshi Masuhara and Teruki Sugiyama
71. XXIII IUPAC Symposium on Photochemistry, Invited  
Ferrara, Italy, July 14, 2010  
“Laser trapping crystallization dynamics at surface and interface:  
glycine and nanoparticle solutions”  
Hiroshi Masuhara, Teruki Sugiyama, Thitiporn Rungsimanon,  
Ken-ichi Yuyama, Takayuki Uwada, and Atsushi Miura
72. Invited Seminar at National Synchrotron Radiation Research Center  
Hsinchu, Taiwan, June 22, 2010  
“Laser Fabrication of Molecular Nanoparticles and Nanocrystals”  
Hiroshi Masuhara
73. Invited Seminar at Instrument Technology Research Center  
Hsinchu, Taiwan, June 10, 2010  
“Exploration with Lasers into New Areas of Molecular Photoscience”  
Hiroshi Masuhara
74. The 3rd Taiwan-Japan Joint Symposium on Organized  
Nanomaterials and Nanostructures Related to Photoscience, Oral  
Taroko, Hualien, Taiwan, March 23, 2010  
“Laser trapping crystallization and polymorph control of glycine in  
solution”  
Hiroshi Masuhara, Thitiporn Rungsimanon, Ken-chi Yuyama, and  
Teruki Sugiyama

75. The 4th Yamada Conference on Advanced Photon and Science Evolution, Invited  
Ibaraki, Osaka, Japan, June 3, 2010  
“Molecular Nano Fabrication and Crystallization by Lasers”  
Hiroshi Masuhara
76. Invited Seminar at Indian Institute of Technology Bombay, Mumbai, India, February 2, 2010,  
“Laser and Organic Nanoparticles”  
Hiroshi Masuhara
77. M L Sircar Lecture at Indian Association for the Cultivation of Science, Invited  
Kolkata, India, February 3, 2010  
“Exploratory Research in Photoscience: Laser Tsunami Manipulation of Single Living Cells and Laser Trapping Crystallization of Molecules”  
Hiroshi Masuhara
78. Invited Seminar at University of Hyderabad  
Hyderabad, India, 2010, February 6, 2010  
“Laser-induced Crystallization and Related Phenomena of Glycine and Proteins in Solution”  
Hiroshi Masuhara
79. The Raman-Mizushima Lecture in the Annual Meeting of Chemical Research Society of India, Award Lecture  
Hyderabad, India, 2010, February 7, 2010  
“Laser and Organic Nanoparticles”  
Hiroshi Masuhara
80. Invited Lecture at Tata Institute of Fundamental Research  
Mumbai, India, 2010, February 8, 2010  
“Laser and Organic Nanoparticles”  
Hiroshi Masuhara
81. Invited Lecture at Bhabha Atomic Research Centre  
Mumbai, India, 2010, February 9, 2010  
“Exploration with Lasers into New Areas of Molecular Photoscience”  
Hiroshi Masuhara
82. 11th Japan-Belgium Symposium on Polymer Science, Invited  
Tokyo, Japan, November 10, 2009  
“Laser-induced crystallization and crystal growth of amino acids and proteins in solution”  
Hiroshi Masuhara, Teruki Sugiyama, Ken-ichi Yuyama, Thitiporn

- Rungsimanon, Atsushi Miura, Takayuki Uwada, and Anwar Usman
83. Invited Seminar at ISIS, CNRS et Universite Strasbourg  
Strasbourg, France, December 16, 2009  
“Laser-induced Crystallization and Related Phenomena of Glycine and Protein in Solution”  
Hiroshi Masuhara, Teruki Sugiyama, Kenichi Yuyama, Thitiporn Rungsimanon, Atsushi Miura, Takayuki Uwada
84. 2009 RCAS Taiwan-Japan Workshop on Single Molecule/Confocal Microscopy, Invited  
Taipei, Taiwan, October 15, 2009  
“Spectroscopy, Photochemistry, and Fabrication of Single Nanocrystals”  
Hiroshi Masuhara
85. Wazapalooza: Mike Wasielewski’s 60th Birthday Symposium, Invited  
Evanston, USA, September 25-26, 2009  
“Laser-induced Crystallization and Crystal Growth: Exploration with Lasers into New Areas of Molecular Photoscience”  
Hiroshi Masuhara
86. International Conference on Organic Photonics and Electronics 2009 (ICOPE2009) & The 11th International Conference on Organic Nonlinear Optics (ICONO 11), Plenary  
Beijing, P. R. China, September 21, 2009  
“Spectroscopic and imaging study on laser trapping dynamics and crystallization of amino acids and proteins in solution”  
Hiroshi Masuhara, Teruki Sugiyama, Ken-ichi Yuyama, Thitiporn Rungsimanon, Takayuki Uwada, and Atsushi Miura
87. XXIV International Conference on Photochemistry (ICP 2009), Invited  
Toledo, Spain, July 21, 2009  
“Crystallization and crystal growth of amino acids in solution by photon pressure of a focused cw near-infrared laser beam”  
Hiroshi Masuhara, Teruki Sugiyama, Kenichi Yuyama, and Thitiporn Rungsimanon
88. Laser and Organic Nanoparticles" International Conference Organic nanophotonics (ICON2009), Plenary  
St. Petersburg, Russia, June 22, 2009  
“Laser and Organic Nanoparticles”  
Hiroshi Masuhara, Teruki Sugiyama, Kenichi Yuyama, Thitiporn Rungsimanon, Atsushi Miura, and Takayuki Uwada

89. Spring Annual Meeting of the Korean Chemical Society, Invited  
A Special Symposium of Physical Chemistry Division "Physical Chemistry for Biological Application"  
Seoul, Korea, April 17, 2009  
"Femtosecond "Laser Tsunami" Manipulation for Single Living Cells in Solution"  
Hiroshi Masuhara
90. Invited Seminar at Korea Advanced Institute of Science and Technology  
Korea, April 20, 2009  
"Laser Trapping Dynamics and Crystallization of Molecules in Solution"  
Hiroshi Masuhara, Teruki Sugiyama
91. Asian Academic Seminar 2009, Invited  
KAST, Kawasaki, March 2-7, 2009  
"Laser Trapping Spectroscopy and Crystallization in Solution"  
Hiroshi Masuhara
92. The 1st NCTU-NAIST workshop on Molecular/Nano Science, Invited  
Hsinchu, Taiwan, November 2009  
"Development of Rayleigh scattering microspectroscopy and its application to particle diffusion/assembling dynamics study"  
Takayuki Uwada
93. The 8th GIST/NAIST Joint Symposium on Advanced Materials, Invited  
Ikoma, Japan, November 26, 2008  
"Dynamics, mechanism, and application of laser ablation of molecular and bio systems"  
Hiroshi Masuhara, Yoichiro Hosokawa, Teruki Sugiyama, and Kazunori Okano
94. The 2nd Japan-Taiwan Joint Symposium on Organized Nanomaterials and Nanostructures Related to Photoscience, Invited  
Kyoto, Japan, November 5, 2008  
"Laser tsunami crystallization and laser trapping crystallization: a challenge for molecular materials"  
Hiroshi Masuhara, Yoichiro Hosokawa, Teruki Sugiyama, Atsushi Miura, and Takayuki Uwada
95. The 3rd BK21 International Symposium on Materials Chemistry, Invited  
Busan, Korea, October 20, 2008



- “Spectroscopy and Imaging of Single Nanoparticles”  
Hiroshi Masuhara
96. Symposium on Organic Micro- and Nano-Crystals (as a satellite meeting of IUCr 2008), Invited  
Sendai, Japan, August 22, 2008  
“Spectroscopy and laser fabrication of single organic nano crystals”  
Hiroshi Masuhara, Tsuyoshi Asahi, and Teruki Sugiyama
97. Invited Lecture at Samsung Electronics Co. Ltd.  
Korea, August 18, 2008  
“Photophysical/chemical Processes and Recent Topics on Nano Fabrication and Patterning”  
Hiroshi Masuhara
98. SPIE Optics+Photonics 2008, Invited  
San Diego, USA, August 12, 2008  
“Molecular assembling and crystallization in solution by photon pressure of a focused cw laser beam”  
Hiroshi Masuhara, Teruki Sugiyama, Hiroyuki Yoshikawa, Yu Nabetani, and Takuji Adachi
99. IUPAC Symposium on Photochemistry, Oral  
Gothenburg, 2008 July 29  
“Protein Crystallization by Femtosecond Laser Ablation in Supersaturated Solution”  
Hiroshi Masuhara



Dual Degree Defense Meeting of National Chiao Tung University (Taiwan) and Katholieke Universiteit Leuven (Belgium) for Dr. Wei-Yi Chiang in Room 522 SBII on November 21, 2017.

Profs. Y.-P. Lee, J. Hofkens, M. Roeffaers, A. Usman, T. Sugiyama, Y. Teranishi, Hsin-Yu Hsu, and H. Masuhara were its Committee Members.

Chair Professor Hiroshi MASUHARA  
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