

Curriculum Vitae

June 12, 2019



1. Name

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| Miki 美貴 | HASEGAWA 長谷川 |
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First Name Last Name

2. Gender

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3. Date of Birth

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|----|------|---|-------|------|------|
| 25 | Date | 9 | Month | 1970 | Year |
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4. Position

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| Professor 教授 |
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5. Affiliation

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| Department of Chemistry and Biological Science, College of Science and Engineering, Aoyama Gakuin University |
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6. Research Field

Photochemistry of Coordination Chemistry, Rare Earth Chemistry (専門: 金属錯体の光化学、希土類の化学)

7. Research interest including biographical information

Dr. Hasegawa holds a diploma degree in Physical Chemistry (Molecular Spectroscopy) from Aoyama Gakuin University. She finished her PhD under the supervision of Prof. Toshihiko Hoshi in 1998. Thereafter, she worked with Prof. Hoshi as an Assistant Professor. Since April 2002 she is head of Coordination Chemistry Laboratory of AGU. Her present research is focused on studying the intra/inter-molecular energy transfer system of lanthanide complexes based on optical spectroscopic approaches.

学位: 博士(理学)、青山学院大学大学院 1998年3月取得。星 敏彦教授(物理化学、分子分光学)

2002年より同大学錯体化学研究室を主宰し、主に分子内・分子間相互作用を加味した希土類錯体の発光性化合物の開発とその原理解明に注力している。

8. Educational Backgrounds (after high school)

April 1989- March 1993 Department of Chemistry, Aoyama Gakuin University

April 1993- March 1995 Master course, Graduate School of Aoyama Gakuin University

April 1995- March 1998 Doctor course, Graduate School of Aoyama Gakuin University

1989年4月 青山学院大学理工学部化学科 入学

1993年3月 同大 卒業

1993年4月 青山学院大学大学院理工学研究科化学専攻 博士前期課程入学

1995年3月 同大大学院 修了 修士(理学)

1995年4月 青山学院大学大学院理工学研究科化学専攻 博士後期課程入学

1998年3月 同大大学院 修了 博士(理学)

9. Professional Backgrounds

2002, 2004, 2006, 2009, 2013, 2016 and 2017 Visiting Professor, Technical University of Vienna, Austria
2008- 2010 Invited Associate Professor, Institute for Molecular Science, Japan
August 2010- July 2012 Senior Scientific Research Specialist, MEXT, Japan
2007- present, Invited Researcher, Research Center for Advanced Science and Technology, The University of Tokyo
2008- present, Advisory Board, JST/CREST "Creative Research for Clean Energy Generation Using Solar Energy"
2012- present, Advisory Board, JST/PRESTO "Molecular Technology and Creation of New Functions"
2016-2017 National Representative of Division II (Inorganic Chemistry), International Union of Pure and Applied Chemistry.
2016 Invited Professor, University of Strasbourg, France
2018-2020 Titular member of Division II (Inorganic Chemistry), International Union of Pure and Applied Chemistry.
2015-present Editorial board member of "Scientific Reports" by Nature Publishing Group
2017 Chief of division 5, Consortium of the University of Tokyo for the Development of Rare Earth Mold in Marine
2018 Visiting Professor, University of Strasbourg, France
2018 Director, Aoyama Gakuin Univ. Mirai Molecular Materials Design Institute, Japan

1998年4月-2002年3月 青山学院大学 助手

2002年4月-2008年3月 青山学院大学 専任講師として独立して研究室主宰

2008年4月-2011年3月 青山学院大学 准教授

2011年4月- 現在 青山学院大学 教授

2018年—現在 青山学院大学未来分子材料デザイン研究所 所長兼務。

この間、ウーブン工科大学客員教授、分子科学研究所客員准教授、東京大学先端科学技術研究センター客員研究員、ストラスブール大学客員教授、ストラスブール大学招聘教授を併任。文部科学省研究振興局学術研究助成課学術調査官を兼任。国際純正応用化学連合、日本学術会議連携委員、東京大学レアアース泥開発推進コンソーシアム部会(新素材)リーダー等兼任。JST CREST「太陽光利用」および JST さきがけ「分子技術」の領域アドバイザーを兼務。

10. Awards

Incentive Award for Young Researcher (Adachi Award), *The Rare Earth Society of Japan*, 2011. 日本希土類学会奨励賞(足立賞)受賞

11. Books and patents

著書

- [1] 'Solvatochromism,' E. S. Dodsworth, M. Hasegawa, M. Bridge, W. Linert, "*Comprehensive Coordination Chemistry II*", vol. 2, Editor A. B. P. Lever, 351-365. (2003, ISBN0-08-0443249)
- [2] 「わかる化学シリーズ 無機化学」, 齋藤勝裕, 長谷川美貴, 東京化学同人 (2005, ISBN9784807914838)[click]
- [3] 錯体化学会選書 3「金属錯体の現代物性化学」 小島憲道・山下正廣 編著, 三共出版 (2008, ISBN978-4-7827-0567-4)
- [4] 「Let's Start ケミストリー」, プレイヤー智子・築部浩 編, 三共出版 (2009, ISBN 978-4-7827-0609-1)
- [5] 「わかる×わかった! 物理化学」, 齋藤勝裕・長谷川美貴 共著, オーム社 (2010, ISBN978-4-274-20868-3) [click]
- [6] 「ベーシックマスター 無機化学」, 増田秀樹・長嶋雲兵 共編, オーム社 (2010, ISBN978-4-274-20921-5) [click]
- [7] 「ハウスクロフト 無機化学」, C. E. Housecroft, A. G. Sharpe 著, 巽和行・西原寛・穂田宗隆・酒井健 監訳, 東京化学同人 (2012, ISBN978-4-807-90777-9)

特許 7件申請、1件特許化済み

11. List of Publications

Reviewed papers

- [1] “Strong luminescent europium complexes induced by the unprecedented anti-chelate effect of acyl groups on a N^6 -hexadentate ligand”, S. Ogata, H. Komiya, R. Tanabe, K. Sugimoto, S. Kawaguchi, K. Goto, M. Hatanaka, A. Ishii and M. Hasegawa, *Chem. Lett.*, **2019**, 48, 593-596,
- [2] “Preparation of Tetrazole-fused π -Conjugated Molecules and Their Fluorescence Behavior”, *T. Hata, Y. Hayashi, Y. Hasegawa, M. Iwai, A. Ishii, *M. Hasegawa, M. Shigeta and *H. Urabe, *Chem. Lett.*, **2019**, in print, doi:10.1246/cl.190150.
- [3] “Soft Crystals -Flexible Response Systems with High Structural Order”, Masako Kato, Hajime Ito, Miki Hasegawa and Kazuyuki Ishii, *Chem. Eur. J.*, **2019**, 25, 5105-5112.
- [4] (Cover page) “Europium amphiphilic naphthalene based complex for the enhancement of linearly polarized luminescence in Langmuir-Blodgett film”, Koushi Yoshihara, Masamichi Yamanaka, Soichi Mizushima, Shuhei Kanno, Junko Tsuchiyagaito, Kazuki Kondo, Takahiro Kondo, Daichi Iwasawa, Hiroaki Komiya, Akira Saso, Shogo Kawaguchi, Kenta Goto, Shuhei Ogata, Hiromi Takahashi, Ayumi Ishii and Miki Hasegawa, *New J. Chem.*, **2019**, in press, DOI: 10.1039/C8NJ03976C.
- [5] “Gelation and Luminescence of Lanthanide Hydrogels Formed with Deuterium Oxide”, Y. Zama, K. Yanai, J. Takeshita, A. Ishii, M. Yamanaka, M. Hasegawa, *RSC Advances*, **2019**, 9, 1949-1955.
- [6] “Multicolor Upconversion Luminescence of Dye-Coordinated Er^{3+} at the interface of Er_2O_3 and CaF_2 nanoparticles”, A. Ishii, Y. Adachi, A. Hasegawa, M. Komaba, S. Ogata, M. Hasegawa, *Sci. Tech. Adv. Mater.*, **2018**, 20, 44-50. DOI: 10.1080/14686996.2018.1558911
- [7] “Phosphorescence Resulting from Interaction between Two Non-equivalent Metals on a Helical π -Conjugated Surface”, M. Akiyama, Y. Tsuchiya, A. Ishii, M. Hasegawa, Y. Kurashige, K. Nozaki, *Chem. Asian, J.*, **2018**, 13, 1847-1976, DOI: 10.1002/asia.201800780.
- [8] (Hot Paper: Cover article) “Slow Magnetic Relaxation in a Palladium–Gadolinium Complex Induced by Electron Density Donation from the Palladium Ion”, D. C. Izuogu, T. Yoshida, H. Zhang, G. Cosquer, K. Katoh, S. Ogata, M. Hasegawa, H. Nojiri, M. Damjanovic, W. Wernsdorfer, T. Uruga, T. Ina, B. K. Breedlove, and M. Yamashita, *Chem. Euro. J.*, **2018**, 24, 9285 – 9294.
- [9] (Back cover art work) “Alkyl chain elongation and acyl group effects in a series of Eu/Tb complexes with hexadentate π -electronic skeletons and their enhanced luminescence in solutions”, S. Ogata, N. Goto, S. Sakurai, A. Ishii, M. Hatanaka, K. Yoshihara, R. Tanabe, K. Kayano, R. Magaribuchi, K. Goto, M. Hasegawa, *Dalton Trans.*, **2018**, 47, 7135-7143.
- [10] “Making graphene luminescent by adsorption of an amphiphilic europium complex”, Y. Hara, K. Yoshihara, K. Kondo, S. Ogata, T. Watanabe, A. Ishii, M. Hasegawa, S. Koh, *Appl. Phys. Lett.*, **2018**, DOI: 10.1063/1.5016418.
- [11] “The enhanced intramolecular energy transfer and strengthened ff luminescence of a stable helical Eu complex in ionic liquids”, Yuki Hasegawa, A. Ishii, N. Yajima, S. Kawaguchi, K. Sugimoto, M Hasegawa, *Molecules*, **2018**, 23, 55, doi:10.3390/molecules23020055 www.mdpi.
- [12] “Sensitive Photodetection with Photomultiplication Effect in an Interfacial $Eu^{2+/3+}$ Complex on a Mesoporous TiO_2 Film”, A. Ishii, T. Sakai, R. Takahashi, S. Ogata, K. Kondo, T. Kondo, D. Iwasawa, S. Mizushima, K. Yoshihara, and M. Hasegawa, *ACS Appl. Mater. Interfaces*, **2018**, 10, 5706–5713.
- [13] “Computational study on the luminescence quantum yields of terbium complexes with 2,2'-bipyridine derivative ligands”, M. Hatanaka, A. Ozawa, T. Wakabayashi, K. Morokuma, M. Hasegawa, *Phys. Chem. Chem. Phys.* **2018**, 20, 3328-3333.
- [14] “Enhanced quantum yield of fluorophores in confined spaces of supermicroporous silica”, S. Ogata, T. Wakayama, H. Watanabe, K. Hayashi, S. Ogata, Y Oaki, M. Hasegawa, H. Imai, *Bull. Chem. Soc. Jpn.*, **2018**, 91, 87-91. (Cover picture, BJSC Award Article)
- [15] “Water-soluble lanthanide complexes with a helical ligand modified for strong luminescence in a wide pH region”, S. Ogata, T. Shimizu, T. Ishibashi, Y. Ishiyone, M. Hanami, M. Ito, A. Ishii, S. Kawaguchi, K. Sugimoto, M. Hasegawa, *New J. Chem.*, **2017**, 41, 6385-6394.

- [16] "Multiple Magnetic Relaxation Pathways and Dual-Emission Modulated by a Heterometallic Tb-Pt Bonding Environment", T. Yoshida, D.C. Izougu, D. Iwasawa, S. Ogata, M. Hasegawa, B.K. Breedlove, G. Cosquer, W. Wernsdorfer, M. Yamashita, *Chem. Euro. J.*, **2017**, *23*, 10527-10531.
- [17] "Organic Dye adsorption by Amphiphilic Tris-Urea Supramolecular Hydrogel", J. Takeshita, Y. Hasegawa, K. Yanai, A. Yamamoto, A. Ishii, M. Hasegawa, M. Yamanaka, *Chem. Asian J.*, **2017**, *12*, 2029-2032.
- [18] "Solar-Pumping Upconversion of Interfacial Coordination Nanoparticles", *Scientific Reports*, **2017**, *7*, 41446.
- [19] "Copper(II), Nickel(II) and Cobalt(II)/(III) self-assembled polynuclear complexes of bis((pyridin-2-yl)-1,2,4-triazol-3-yl)methane", A. N. Gusev, V. F. Shul'gin, I. O. Ryush, M. Hasegawa, M. A. Kiskin, N. N. Efimov, K. A. Lyssenko, I. L. Eremenko, and W. Linert, *Eur. J. Inorg. Chem.*, **2017**, 704-712.
- [20] "Polymorphism-based luminescence of lanthanide complexes with a deuterated 1,10-phenanthroline", S. Ogata, A. Ishii, C. L. Liu, T. Kondo, N. Yajima, M. Hasegawa, *J. Photochem. Photobiol., A: Chemistry*, **2017**, *334*, 55-60.
- [21] "Impact of Phenyl Groups on Oxygen-Bridged V-Shaped Organic Semiconductors", C. Mitsui, W. Kubo, Y. Tanaka, M. Yamagishi, T. Annaka, H. Dosei, M. Yano, K. Nakamura, D. Iwasawa, M. Hasegawa, T. Takehara, T. Suzuki, H. Sato, A. Yamano, J. Takeya, and T. Okamoto, *Chem. Lett.*, **2016**, *46*(3), 338-341.
- [22] "Slow magnetic relaxation of lanthanide(III) complexes with a helical ligand", H. Wada, S. Ooka, D. Iwasawa, M. Hasegawa, and T. Kajiwara, *Magnetochemistry*, **2016**, *2*(4), 43.
- [23] "Large edge magnetism in oxidized few-layer black phosphorus nanomesh", Y. Nakanishi, A. Ishii, C. Ohata, D. Soriano, R. Iwaki, K. Nomura, M. Hasegawa, T. Nakamura, S. Katsumoto, S. Roshe, J. Haruyama, *Nano Research*, **2016**, DOI: 10.1007/s12274-016-1355-8.
- [24] "The Ethanol-induced Interfacial Reduction of a Europium Complex on SiO₂ Nanoparticles", A. Ishii, and M. Hasegawa, *Chem. Lett.*, **2016**, *45*, 1265-1269.
- [25] "Alkylated oxygen-bridged V-shaped molecules: Impacts of substitution position and length of alkyl chains on crystal structures and fundamental properties in aggregation forms", C. Mitsui, T. Annaka, K. Nakamura, M. Mitani, D. Hashizume, K. Nakahara, M. Yamagishi, T. Ueno, Y. Tanaka, M. Yano, D. Iwasawa, M. Hasegawa, H. Sato, A. Yamano, J. Takeya, T. Okamoto, *Polymer J.*, **2016**, *49*, 215-221.
- [26] "Quality Evaluation for Japanese Sake Using Taste Sensor with LB Films", M. Hiroki, H. Uchida, Y. Hasegawa, M. Hasegawa, *The Institute of Electrical Engineers Japan Transactions(E)*, **2016**, *136*, 198-204.
- [27] "Gate-Tunable Atomically Thin Lateral MoS₂ Schottky Junction Patterned by Electron Beam", Y. Katagiri, T. Nakamura, A. Ishii, C. Ohata, M. Hasegawa, S. Katsumoto, T. Cusati, A. Fortunelli, G. Iannaccone, G. Fiori, S. Roshe, J. Haruyama, *Nano Lett.*, **2016**, *16*, 3788-3794.
- [28] "Mechanoresponsive liquid crystals exhibiting reversible luminescent color changes at ambient temperature", M. Mitani, S. Ogata, S. Yamane, M. Yoshio, M. Hasegawa, and T. Kato, *J. Mater. Chem. C*, **2016**, *14*, 2752-2764 (Cover picture).
- [29] "Synthesis and characterization of a family of Fe(II) tetrazole complexes [Fe(C6mtz)6]X₂ (X = BF₄⁻, ClO₄⁻, PF₆⁻)", M. T. Kryeziu, A. Caneschi, M. Fittipaldi, G. Spina, M. Lantieri, M. Weil, M. Hasegawa, W. Linert, *J. Coord. Chem.*, **2015**, *68*, 19, 3457-3471.
- [30] "An Interfacial Europium Complex on SiO₂ Nanoparticles: Reduction-Induced Blue Emission System", A. Ishii, M. Hasegawa, *Sci. Rep.*, **2015**, *5*, 11714.
- [31] "Cation-Tuned Stimuli-Responsive and Optical Properties of Supramolecular Hydrogels", M. Yamanaka, K. Yanai, Y. Zama, M. Yoshida, A. Ishii, M. Hasegawa, *Chem. Asian J.*, **2015**, *10*, 6, 1299-1303.
- [32] "Luminescence of fusion materials of polymeric chain-structured lanthanide complexes", S. Sato, A. Ishii, C. Yamada, J. Kim, C. H. Song, A. Fujiwara, M. Takata, M. Hasegawa, *Polymer J.*, **2015**, *47*, 195-200.
- [33] "Substitution effects on optical properties of iminonitroxide- substituted iminonitroxide diradical", R. Nakamura, Y. Shigeta, K. Okuno, M. Hasegawa, M. Fukushima, S. Suzuki, M. Kozaki, K. Okada & M. Nakano, *Molecular Physics*, **2014**, *113*, 267-273.
- [34] "Control of the Single-Molecule Magnet Behavior of Lanthanide-Diarylethene Photochromic Assemblies by Irradiation with

- Light”, D. Pinkowicz, M. Ren, L-M. Zheng, S. Sato, M. Hasegawa, M. Morimoto, M. Irie, B. K. Breedlove, G. Cosquer, K. Katoh, M. Yamashita, *Chem. Euro. J.*, **2014**, 20, 39, 12502–12513.
- [35] “Adducts of lanthanide acetylacetonates with 5-phenyl-2-(2-pyridyl)-7,8-benzo-6,5-dihydro-1,3,6-triazaindolizine: structure and photoluminescence”, A.N. Gusev, S. Shulgin, W. Linert, M. Hasegawa, G. Aleksandrov, I. Eremenko, *Russian Chem. Bull.*, **2014**, 63, 7, 149–1497.
- [36] “Photophysical studies on ternary mixed ligand europium complexes containing pyridyltriazolymethane and 1,3-diketonate ligands”, A. N. Gusev, M. Hasegawa, V. F. Shul’gin, G. Nishchymenko, W. Linert, *Inorg. Chim. Acta*, **2014**, 414, 71–77.
- [37] “Luminescence behaviour in acetonitrile and in the solid state of a series of lanthanide complexes with a single helical ligand”, M. Hasegawa, H. Ohtsu, D. Kodama, T. Kasai, S. Sakurai, A. Ishii, K. Suzuki, *New J. Chem.*, **2014**, 38, 1225–1234.
- [38] “Aggregation-Induced Emission of a Liquid-Crystalline Quinolinium Salt Molecule in Aqueous Solution”, K. Tanabe, D. Kodama, M. Hasegawa, T. Kato, *Chem. Lett.*, **2013**, Advance Publication.
- [39] “Effect of the counter-anion on the spin-transition properties of a family of Fe(II) tetrazole complexes, [Fe(i4tz)₆]₂ (X = ClO₄⁻, PF₆⁻, SbF₆⁻, BF₄⁻)”, M. Tafili-Kryeziu, M. Weil, T. Muranaka, A. Bousseksou, M. Hasegawa, J. Akimitsu, W. Linert, *Dalton Trans.*, **2013**, 42, 15796–15804.
- [40] “Synthesis, structure and luminescence studies of Eu(III), Tb(III), Sm(III), Dy(III) cationic complexes with acetylacetonate and bis(5-(pyridine-2-yl)-1,2,4-triazol-3-yl)propane”, A. N. Gusev, M. Hasegawa, T. Shimizu, T. Fukawa, S. Sakurai, G. A. Nishchymenko, V. F. Shul’gin, S. B. Meshkova, W. Linert, *Inorganica Chimica Acta*, **2013**, 406, 279–284.
- [41] “Photo- and electroluminescent properties europium complexes using bistriazole ligands” A. N. Gusev, V. F. Shul’gin, G. Nishchymenko, M. Hasegawa, W. Linert, *Synthetic Metals*, **2013**, 164, 17–21.
- [42] “Full-color tunable photoluminescent ionic liquid crystals based on tripodal pyridinium, pyrimidinium, and quinolinium salts”, K. Tanabe, Y. Suzui, M. Hasegawa, T. Kato, *J. Am. Chem. Soc.* **2012**, 134, 5652–5661.
- [43] “Structural and photophysical studies of europium complexes containing triazole ligands”, A. N. Gusev, V. F. Shul’gin, S. B. Meshkova, P. G. Doga, M. Hasegawa, G. G. Aleksandrov, I. L. Eremenko, W. Linert, *Inorg. Chim. Acta*, **2012**, 387, 321–326.
- [44] “Photochemical aspects of luminescent rare earth complexes based on the intra-/inter molecular structure and energy state”, M. Hasegawa, *Rare Earth*, **2011**, 59, 1–10.
- [45] “Structure and photochemistry of luminescent rare earth complexes”, M. Hasegawa, I. Takahashi, *Spring-8 Research Information*, **2011**, 16, 191–196.
- [46] “Luminescence Tuning of Imidazole-Based Lanthanide(III) Complexes [Ln = Sm, Eu, Gd, Tb, Dy]”, C. Kachi-Terajima, K. Yanagi, T. Kazuki, T. Kitazawa, M. Hasegawa, *Dalton Trans.*, **2011**, 40, 2249–2256.
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- [50] “Structural and spectroscopic properties of a copper(I)-bis(N-heterocyclic)carbene complex”, K. Matsumoto, N. Matsumoto, A. Ishii, T. Tsukuda, M. Hasegawa, T. Tsubomura, *Dalton Trans.* **2009**, 6795–6801.
- [51] “The key role of accurate lattice parameters in revealing subtle structural differences - a case study in the system [Ln(phen/phen-d₈)₂(NO₃)₃]", F. Werner, K. Tada, A. Ishii, M. Hasegawa, *Cryst. Eng. Comm.*, **2009**, 11, 1197–1200.
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