

Original Papers A01 Group (2013)

Masato Kakihana (Principal Investigator)

Professor, Institute of Multidisciplinary Research for Advanced Materials, Tohoku University

Makoto Kobayashi (Co-Investigator; Renkei-Kenkyusha)

- **Minoru Osada, Makoto Kobayashi and Masato Kakihana, "Enhanced Dielectric Response Induced by Controlled Morphology in Rutile TiO₂ Nanocrystals", J. *Ceram. Soc. Jpn.*, **121**, 593-597 (2013). (doi: 10.2109/jcersj2.121.593)
 - [†]Co-Investigator of the project management group, Collaborative research.
- Satoko Tezuka, Yasushi Sato, Tetsufumi Komukai, Yuji Takatsuka, Hideki Kato and *<u>Masato Kakihana</u>, "Eu²⁺-Activated CaSrSiO₄: a New Red-Emitting Oxide Phosphor for White-Light-Emitting Diodes", *Appl. Phys. Express*, 6, 072101 (4 pages) (2013).

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- *<u>Masato Kakihana</u>, Jihae Kim, Tetsufumi Komukai, Hideki Kato, Yasushi Sato, <u>Makoto Kobayashi</u> and Yuji Takatsuka, "Exploration of New Phosphors Using a Mineral-Inspired Approach in Combination with Solution Parallel Synthesis", *Opt. Photonics J.*, **3**, 5-12 (2013). (doi: 10.4236/opj.2013.36A002)
- Minsung Kim, <u>Makoto Kobayashi</u>, Hideki Kato and *<u>Masato Kakihana</u>, "A Highly Luminous LiCaPO₄:Eu²⁺ Phosphor Synthesized by a Solution Method Employing a Water-Soluble Phosphate Ester", *Opt. Photonics J.*, **3**, 13-18 (2013). (doi: 10.4236/opj.2013.36A003)
- Minsung Kim, <u>Makoto Kobayashi</u>, Hideki Kato and <u>*Masato Kakihana</u>, "Enhancement of Luminescence Properties of a KSrPO₄:Eu²⁺ Phosphor Prepared Using a Solution Method with a Water-Soluble Phosphate Oligomer", *J. Mater. Chem. C*, **1**, 5741-5746 (2013). (doi: 10.1039/C3TC31121J)
- Mitsuru Yoshizawa, <u>Makoto Kobayashi</u>, Valery Petrykin, Hideki Kato and *<u>Masato Kakihana</u>, "Insights into a Selective Synthesis of Anatase, Rutile and Brookite-Type Titanium dioxides by a Hydrothermal Treatment of Titanium Complexes", *J. Mater. Res.*, **29**, 90-97 (2014). (doi: 10.1557/jmr.2013.229 (Proceedings)
- Minsung Kim, <u>Makoto Kobayashi</u>, Hideki Kato and *<u>Masato Kakihana</u>, "Synthesis of a LiCaPO₄:Eu²⁺ Phosphor by a Polymerizable Complex Method Using a Novel Water-Soluble Phosphate Precursor", *IMID2013*, 264 (2013): *The 13th International Meeting on Information Display (IMID2013)*, Daegu, Korea, August 26-29, 2013.



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Tatsuya Nishimura (Co-Investigator; Renkei-Kenkyusha)

Takeshi Sakamoto (Co-Investigator; Renkei-Kenkyusha)

- Fangjie Zhu, *<u>Tatsuya Nishimura, Takeshi Sakamoto, Hidekazu Tomono, *†Hiroki Nada</u>, Yasushi Okumura, ††<u>Hirotsugu Kikuchi</u>, and *<u>Takashi Kato</u>, "Tuning the Stability of CaCO₃ Crystals with Magnesium Ions for Formation of Aragonite Thin Films on Organic Polymer Templates, *Chem. Asian J.*, **8**, 3002-3009 (2013). †A01 group, ††A02 group, Collaborative research.
- Hidekazu Tomono, *†<u>Hiroki Nada</u>, Fangjie Zhu, <u>Takeshi Sakamoto</u>, <u>Tatsuya</u> <u>Nishimura</u>, and <u>Takashi Kato</u>, "Effects of Magnesium Ions and Water Molecules on the Structure of Amorphous Calcium Carbonate: A Molecular Dynamics Study", *J. Phys. Chem. B*, **117**, 14849-14856 (2013). †A01 group, Collaborative research.
- Kana Tanabe, Daisuke Kodama, <u>†Miki Hasegawa</u>, and <u>*Takashi Kato</u>, "Aggregation-Induced Emission of a Liquid-Crystalline Quinolinium Salt Molecule in Aqueous Solution", *Chem. Lett.*, **43**, 184-186 (2014). <u>†A03</u> group, Collaborative research.
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- Tsuguyuki Saito, †<u>Yuya Oaki, Tatsuya Nishimura</u>, Akira Isogai, and *<u>Takashi Kato</u>, "Bioinspired Stiff and Flexible Composites of Nanocellulose-Reinforced Amorphous CaCO₃", *Mater. Horiz.*, in press. (DOI: 10.1039/C3MH00134B) †A03 group, Collaborative research.
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Senior Researcher, Research Institute for Environmental Management and Technology, National Institute of Advanced Industrial Science and Technology Gen Sazaki (Co-Investigator; Renkei-Kenkyusha)

- Hidekazu Tomono, *<u>Hiroki Nada</u>, Fangjie Zhu, †<u>Takeshi Sakamoto</u>, †<u>Tatsuya Nishimura</u> and ††<u>Takashi Kato</u>, "Effects of Magnesium Ions and Water Molecules on the Structure of Amorphous Calcium Carbonate: A Molecular Dynamics Study", *J. Phys. Chem. B*, **117**, 14849-14856 (2013). (doi: 10.1021/jp407721x) †A01 group, ††A01 group, Collaborative research.
- Fangjie Zhu, †*Tatsuya Nishimura, †Takeshi Sakamoto, Hidekazu Tomono, *<u>Hiroki</u> <u>Nada</u>, Yasushi Okumura, ††Hirotsugu Kikuchi and †††*Takashi Kato, "Tuning the Stability of CaCO₃ Crystals with Magnesium Ions for Formation of Aragonite Thin Films on Organic Polymer Templates", *Chem. Asian J.*, **8**, 3002-3009 (2013). (doi: 10.1002/asia.201300745) [Selected for Back Cover Picture] †A01 group, ††A02 group, †††A01 group, Collaborative research.

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- Duc H. T. Le, Ryo Hanamura, Dieu-Huong Pham, Masaru Kato, David A. Tirrell, Tatsuya Okubo and *<u>Ayae Sugawara-Narutaki</u>, "Self-Assembly of Elastin-Mimetic Double Hydrophobic Polypeptides", *Biomacromolecules*, 14, 1028-1034 (2013).
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Atsushi Yoshizawa (Principal Investigator)

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- Wataru Nishiya, Yoichi Takanishi, Jun Yamamoto and *<u>Atsushi Yoshizawa</u>, "Molecular Design for a Cybotactic Nematic Phase", *J. Mater. Chem. C*, in press. (doi:10.1039/c4tc00001c)
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- Yasuhiro Kimoto, Ayumi Nishizawa, *Yoichi Takanishi, <u>Atsushi Yoshizawa</u> and Jun Yamamoto, "Layer Modulated Smectic-C Phase in Liquid Crystals with a Terminal Hydroxyl Group", *Phys. Rev. E*, in press. (doi: 10.1103/PhysRevE.00.002500)

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- Shintaro Yamamoto, Mai Tomiyama, Ryo Nemoto, Takako Naganuma, Tomohisa <u>Tomohisa Ogawa</u>, Koji Muramoto, "Effects of Food Lectins on the Transport System of Human Intestinal Caco-2 Cell Monolayers", *Biosci. Biotech. Biochem.*, 77(9), 1917-1924 (2013).
- Yasuharu Watanabe, Yin-Hsuan Chang, Osamu Nakamura, Takako Naganuma, <u>Tomohisa Ogawa</u>, Koji Muramoto, "Rhamnose-Binding Lectins Induce Respiratory Burst Activity in Macrophage Cells from Rainbow Trout", *Fisheries Sci.*, **79**, 513-519 (2013). (doi: 10.1007/s12562-013-0624-7)

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- Natsume Koike, Takaaki Ikuno, *Tatsuya Okubo and <u>Atsushi Shimojima</u>, "Synthesis of Monodisperse Organosilica Nanoparticles with Hollow Interiors and Porous Shells Using Silica Nanospheres as Templates", *Chem. Commun.*, **49**, 4998-5000 (2013). (DOI: 10.1039/c3cc41904e).
- Philippe Saint-Cricq, Junzheng Wang, <u>†Ayae Sugawara-Narutaki</u>, <u>Atsushi</u> <u>Shimojima</u> and Tatsuya Okubo, "A New Synthesis of Well-Dispersed, Core-Shell Ag@SiO₂ Mesoporous Nanoparticles Using Amino Acids and Sugars", *J. Mater. Chem. B.*, **1**, 2451-2454 (2013). (DOI: 10.1039/c3tb20210k) †A01 group, Collaborative research.
- Junzheng Wang, Hiroki Yabe, <u>Atsushi Shimojima</u>, Takashi Sekiguchi, <u>†Ayae</u> <u>Sugawara-Narutaki</u> and *Tatsuya Okubo, "Amino Acid-Assisted One-Dimensional



Assembly of Semiconducting Metal Oxide Nanoparticles in Aqueous Alcohol Media", *Chem. Lett.*, in press (2014). †A01 group, Collaborative research.

Masamichi Yamanaka (Principal Investigator)

Associate Professor, Department of Chemistry, Graduate School of Science, Shizuoka University

1. Daisuke Higashi, Masaru Yoshida and <u>Masamichi Yamanaka</u>, "Thixotropic Hydrogel Formation in Various Aqueous Solutions through Self-Assembly of an Amphiphilic Tris-Urea", *Chem. Asian J.*, **8**, 2584-2587 (2013).

Kenji Higashiguchi (Principal Investigator)

Assistant Professor, Department of Synthetic Chemistry and Biological Chemistry, Graduate School of Engineering, Kyoto University

 M. Inoue, <u>K. Higashiguchi</u>*, K. Matsuda*, "Photocontrol of Solvent Responsiveness of Structural Colored Balloons", *Langmuir*, **29**, 7047-7051 (2013). (DOI: 10.1021/la400534s)

Satoshi Horike (Principal Investigator)

Assistant Professor, Graduate School of Engineering, Kyoto University

- Kanokwan Kongpatpanich, <u>Satoshi Horike</u>, Masayuki Sugimoto, Shinji Kitao, Makoto Seto, Susumu Kitagawa, "A Porous Coordination Polymer with a Reactive Diiron Paddlewheel Unit", *Chem. Commun.*, **50**, 2292-2294 (2014).
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Lecturer, Department of Polymer Chemistry, Graduate School of Engineering, Kyoto University

1. *Yasuhiro Morisaki, Masato Tominaga, Takuya Ochiai and *Yoshiki Chujo,



"o-Carborane-Based Biphenyl and p-Terphenyl Derivatives", Chem. Asian J., in press. (doi: 10.1002/asia.201400067).

- Masato Tominaga, Hirofumi Naito, *<u>Yasuhiro Morisaki</u> and *Yoshiki Chujo, "Control of the Emission Behaviors of Trifunctional *o*-Carborane Dyes", *Asian J. Org. Chem.*, in press. (doi: 10.1002/ajoc.201300280)
- *<u>Yasuhiro Morisaki</u>, Naoya Kawakami, Tatsuya Nakano and *Yoshiki Chujo, "Synthesis and Properties of a Through-Space Conjugated Dimer", *Chem. Lett.*, in press. (doi: 10.1246/cl.131059)
- *<u>Yasuhiro Morisaki</u>, Masayuki Gon, Takahiro Sasamori, Norihiro Tokitoh and *Yoshiki Chujo, "Planar Chiral Tetrasubstituted [2.2]Paracyclophane: Optical Resolution and Functionalization", *J. Am. Chem. Soc.*, **136**, 3350-3353 (2014). (doi: 10.1021/ja412197j)
- *<u>Yasuhiro Morisaki</u>, Yuichi Tsuji and *Yoshiki Chujo, "Synthesis of Cyclic Compounds Consisting of Face-to-Face Oligophenyls", *Tetrahedron Lett.*, 55, 1631-1634 (2014). (doi: 10.1016/j.tetlet.2014.01.093)
- *Mitsuhiko Morisue, Hiroki Fukui, Masaki Shimizu, Kenichi Inoshita, <u>Yasuhiro</u> <u>Morisaki</u> and *Yoshiki Chujo, "Chirality Induction in Binuclear Phthalocyanine Tweezers", *Tetrahedron Lett.*, 55, 271-274 (2014). (doi: 10.1016/j.tetlet.2013.11.017)
- *<u>Yasuhiro Morisaki</u>, Naoya Kawakami, Tatsuya Nakano and *Yoshiki Chujo, "Energy Transfer Properties of a [2.2]Paracyclophane-Based Through-Space Dimer", *Chem. Eur. J.*, **19**, 17715-17718 (2013). (doi: 10.1002/chem.201303108)
- Masato Tominaga, *<u>Yasuhiro Morisaki</u> and *Yoshiki Chujo, "Luminescent Polymer Consisting of 9,12-Linked *o*-Carborane", *Macromol. Rapid Commun.*, **34**, 1357-1362 (2013). (doi: 10.1002/marc.201300368)
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Kazunori Matsuura (Principal Investigator)

Professor, Graduate School of Engineering, Tottori University

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Akira Shigenaga (Principal Investigator)

Assistant Professor, Institute of Health Biosciences and Graduate School of Pharmaceutical Sciences, The University of Tokushima

- Takahiro Nakamura, <u>Akira Shigenaga</u>, Kohei Sato, Yusuke Tsuda, Ken Sakamoto, *Akira Otaka, "Examination of Native Chemical Ligation Using Peptidyl Prolyl Thioester", *Chem. Commun.*, **50**, 58-60 (2014). (doi: 10.1039/C3CC47228K)
- Kohei Sato, <u>Akira Shigenaga</u>, Keisuke Kitakaze, Ken Sakamoto, Daisuke Tsuji, Kohji Itoh, *Akira Otaka, "Chemical Synthesis of Biologically Active Monoglycosylated GM2-Activator Protein Analog Using *N*-Sulfanylethylanilide Peptide", *Angew. Chem. Int. Ed.*, **52**, 7855-7859 (2013). (doi: 10.1002/anie.201303390)

Akihiro Kishimura (Principal Investigator)

Associate Professor, Center for Molecular Systems & Department of Applied Chemistry, Faculty of Engineering, Kyushu University

- Peng Mi, Daisuke Kokuryo, Horacio Cabral, Michiaki Kumagai, Takahiro Nomoto, Ichio Aoki, Yasuko Terada, <u>Akihiro Kishimura</u>, *Nobuhiro Nishiyama, and *Kazunori Kataoka, "Hydrothermally Synthesized Pegylated Calcium Phosphate Nanoparticles Incorporating Gd-DTPA for Contrast Enhanced MRI Diagnosis of Solid Tumors", *J. Control. Release*, **174**, 63-71 (2014). (DOI: 10.1016/j.jconrel.2013.10.038)
- Sayan Chuanoi, Wen-Fei Dong, *<u>Akihiro Kishimura</u>, Yasutaka Anraku, and *Kazunori Kataoka, "Structural Factors Directing to Nanosized Polyion Complex Vesicles (Nano-Picsomes) from a Pair of Block Aniomer/Homo Catiomer: Studies on Aniomer Segment Length and Catiomer Side Chain Structure", *Polymer J.*, 46, 130-135 (2014). (DOI: 10.1038/pj.2013.82)



Reviews and Account Articles A01 Group (2013)

Masato Kakihana (Principal Investigator)

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Makoto Kobayashi (Co-Investigator; Renkei-Kenkyusha)

 *<u>Makoto Kobayashi</u>, Hideki Kato and <u>Masato Kakihana</u>, "Synthesis of Titanium Dioxide Nanocrystals with Controlled Crystal-and Micro-Structures from Titanium Complexes", *Nanomater. Nanotechnol.*, **3**, 1-10 (2013). (Invited Articles) (doi: 10.5772/57533).

Other articles in Japanese: 1

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Articles in Japanese: 2

Ayae Sugawara-Narutaki (Principal Investigator) Associate Professor, Department of Applied Chemistry, Graduate School of Engineering, Nagoya University Articles in Japanese: 2

Articles in Japanese: 2

Atsushi Yoshizawa (Principal Investigator)

Professor, Department of Frontier Materials Chemistry, Hirosaki University

 *<u>Atsushi Yoshizawa</u>, "Material Design for Blue Phase Liquid Crystals and Their Electro-Optical Effects", *RSC. Advances*, **3**, 25475-25497 (2013). (doi: 10.1039/c3ra43546f)

Tomohisa Ogawa (Principal Investigator)

Associate Professor, Graduate School of Life Sciences, Tohoku University

1. *<u>Tomohisa Ogawa</u>, and Tsutoshi Shirai, "Tracing Ancestral Specificity of Lectins: Ancestral Sequence Reconstruction Method as a New Approach in Protein



Engineering", *In: Lectin Methods and Protocols Part4, Method in Molecular Biology*, Chapter 44, (Ed. by Hirabayashi, J.) Humana Press, (2014). ISSN: 1064-3745

- *<u>Tomohisa Ogawa</u>, and Tusyoshi Shirai, "Experimental Molecular Archeology: Reconstruction of Ancestral Mutants and Evolutionary History of Proteins as a New Approach in Protein Engineering", *In: Protein Engineering -Technology and Application* (Ed. by T. Ogawa) InTech, (2013). ISBN 980-953-307-520-9
- Yasuharu. Watanabe, Takako Naganuma, <u>Tomohisa Ogawa</u>, and Koji Muramoto, "Lectins of Marine Origin and Their Clinical Applications", *In: Antitumor potential and other emerging medicinal properties of natural compounds*, Chapter 4 (Ed. by E.F. Fang and T.B. Ng) Springer, (2013). ISBN 978-94-007-6213-8. (doi: 10.1007/978-94-007-6214-5)

Atsushi Shimojima (Principal Investigator)

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 *Kazuyuki Kuroda, *<u>Atsushi Shimojima</u>, Kazufumi Kawahara, Ryutaro Wakabayashi, Yasuhiro Tamura, Yusuke Asakura and Masaki Kitahara "Utilization of Alkoxysilyl Groups for the Creation of Structurally Controlled Siloxane-Based Nanomaterials", *Chem. Mater.*, **26**, 211-220 (2013). (DOI: 10.1021/cm4023387).

Other articles in Japanese: 1

Masamichi Yamanaka (Principal Investigator)

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1. *<u>Masamichi Yamanaka</u>, "Urea Derivatives as Low-Molecular-Weight Gelators", *J. Incl. Phenom. Macrocycl. Chem.*, **77**, 33-48 (2013).

Other articles in Japanese: 1

Kenji Higashiguchi (Principal Investigator)

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Articles in Japanese: 1

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Articles in Japanese: 2

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<u>Yasuhiro Morisaki</u> and Yoshiki Chujo, "Cyclophane-Based π-Stacked Polymers", In *π-Stacked Polymers and Molecules: Synthesis, Properties, and Theory*, Springer, Berlin, Chapter 3, pp 151-184 (2014). (doi: 10.1007/978-4-431-54129-5_3)

Other articles in Japanese: 1

Kazunori Matsuura (Principal Investigator)

Professor, Graduate School of Engineering, Tottori University

- 1. <u>Kazunori Matsuura</u>, "Biomolecular Self-Assembling Systems for Multivalent Ligand Display", *Trend Glycosci. Glycotech*, **25**, 227-239(2013).
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Other articles in Japanese: 6

Akihiro Kishimura (Principal Investigator)

Associate Professor, Center for Molecular Systems & Department of Applied Chemistry, Faculty of Engineering, Kyushu University

 <u>Akihiro Kishimura</u>, "Development of Polyion Complex Vesicles (PICsomes) from Block Copolymers for Biomedical Applications", *Polymer. J*, 45, 892-897 (2013). (DOI: 10.1038/pj.2013.33) [Selected as a cover page]

Other articles in Japanese: 1



Books A01 Group (2013)

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Tatsuya Nishimura (Co-Investigator; Renkei-Kenkyusha)

Takeshi Sakamoto (Co-Investigator; Renkei-Kenkyusha)

- <u>Takashi Kato</u> and Yuko Kamkawa, "Hydrogen-Bonded Systems: Discrete Defined Aggregates by Intermolecular H-Bonding, Amides, Carboxylic Acids, and Heterocycles" in *Handbook of Liquid Crystals 2nd Edition* (Eds. John W. Goodby, Peter J. Collings, <u>Takashi Kato</u>, Carsten Tschierske, Helen Gleeson, and Peter Raynes) Vol. 5, Ch. 10, pp. 513-540 (Wiley-VCH Verlag GmbH & Co. KGaA, February, 2014).
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- Kyosuke Isoda, Takuma Yasuda, Masahiro Funahashi, and <u>Takashi Kato</u>, "Redox-Active (Electrochromic) Liquid Crystals" in *Handbook of Liquid Crystals* 2nd Edition (Eds. John W. Goodby, Peter J. Collings, <u>Takashi Kato</u>, Carsten



Tschierske, Helen Gleeson, and Peter Raynes) Vol. 8, Ch. 22, pp. 709-725 (Wiley-VCH Verlag GmbH & Co. KGaA, February, 2014).

 Masafumi Yoshio and <u>Takashi Kato</u>, "Liquid Crystals as Ion Conductors" in *Handbook of Liquid Crystals 2nd Edition* (Eds. John W. Goodby, Peter J. Collings, <u>Takashi Kato</u>, Carsten Tschierske, Helen Gleeson, and Peter Raynes) Vol. 8, Ch. 23, pp. 727-749 (Wiley-VCH Verlag GmbH & Co. KGaA, February, 2014).

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 Yoshinori Furukawa, <u>Gen Sazaki</u> and <u>Hiroki Nada</u>, "Surface and Interface Science, Volume 3: Surfaces of Multi-component Solids (Alloy, Compound Semiconductors)", pp. 305-348, Wiley-VCH, Weinheim, (December, 2013). [Selected for Cover Picture]

Other articles in Japanese: 1

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