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Mutsumi Kimura is a full professor of Faculty of Textile Science and Technology at Shinshu University in Ueda. Professor Kimura obtained his Bachelor degree in Agriculture (1990) at Tsukuba University and his master degree in Environmental Science (1992) at Tsukuba University. He received his doctor degree in Engineering (1995) at Shinshu University under the supervision of Prof. Hirofusa Shirai studying artificial models of natural metalloenzymes. He became Research Associate in 1995 and Associate Professor in 2003 at the Faculty of Textile Science and Technology of Shinshu University. He was selected to be a PRESTO researcher at the Japan Science and Technology Agency from 2001 to 2005. He worked with Prof. Minoru Taya of University of Washington in 2009 as a visiting scientist. In 2013, he became Professor at the Faculty of Textile Science and Technology of Shinshu University. From 2013, he became a co-PI of Aqua Innovation center of Shinshu University. He received the Award of The Society of Fiber Science and Technology, Japan in 2013.

Prof. Kimura works on developing new functional organic and inorganic nanomaterials having catalytic, energy conversion, and molecular sensing functions. He also investigated on the hybridaization of these nanomaterials with fibers and nanofibers to realize smart textile devices. He published 240 papers, 10 books, and over 50 patents from 1995 to 2017 (ResearchID: D-4516-2014, h-index: 40).



ACADEMIC EXPERIENCE

Apr 1995 – Mar 2003 SHINSHU UNIVERSITY

Research Associate

Teaching and management of Student experiments for undergraduate students

Teaching of Computer Program for undergraduate students

Research advisor for graduate students (40 master and 5 doctor students)

Apr 2003 – Mar 2013 SHINSHU UNIVERSITY

Associate Professor

Taught Physical Chemistry for undergraduate students

Taught Inorganic Chemistry for undergraduate students

Taught Supramolecular Chemistry for graduate students

Supervise of researches for 30 master and 3 doctor students

Apr 2013 – SHINSHU UNIVERSITY

Professor

Taught Physical Chemistry for undergraduate students

Taught Inorganic Chemistry for undergraduate students

Taught Supramolecular Chemistry for graduate students

Supervise of researches for 10 master and 5 doctor students


Program manager for master program

Publication list for recent 5 years

1. Structural Effect of Pendant Unit in Thiocyanate-Free Ru(II) Sensitizers on Dye-Sensitized Solar Cell Performance, Rei Tamura, Takahiro Kono, Shogo Mori, and Mutsumi Kimura, *European Journal of Inorganic Chemistry*, 2017, in press.
2. Catalytic Oxidation of Thiols within Cavities of Phthalocyanine Network Polymers, Rei Tamura, Yoshiyuki Hattori, Nagao Kobayashi, and Mutsumi Kimura, *Macromolecules*, 2017, in press.
3. Regioregular Phthalocyanines Substituted with Bulky Donors at Non-Peripheral Positions, Satoshi Yamamoto, Kengo Kuribayashi, Takuro N. Murakami, Eunsang Kwon, Martin J. Stillman, Nagao Kobayashi, Hiroshi Segawa, and Mutsumi Kimura, *Chemistry-An European Journal*, 2017, in press.
4. Stimuli-responsible rheological properties for liquid phthalocyanines, Yoshiaki Chino, Avijit Ghosh, Takashi Nakanishi, Nagao Kobayashi, Kazuchika Ohta, Mutsumi Kimura, *Chemistry Letters*, 2017, in press.
5. Synthesis and Photophysical studies of asymmetric zinc phthalocyanine - magnetic

- nanoparticles conjugates, Gauta Matlou, Nagao Kobayashi, Mutsumi Kimura, Tebello Nyokong, *New Journal of Chemistry*, 2017, in press.
6. Discotic liquid crystals of transition metal complexes, 54: Rapid microwave-assisted synthesis and homeotropic alignment of phthalocyanine-based liquid crystals, Toshiyuki Akabane, Kazuchika Ohta, Tokihiro Takizawa, Takehiro Matsuse, Mutsumi Kimura, *Journal of Porphyrins and Phthalocyanines*, 2017, 21, 476-492.
7. Discotic liquid crystals of transition metal complexes, 53: Synthesis and mesomorphism of phthalocyanines substituted by m-alkoxyphenylthio groups, Yoshiaki Chino, Kazuchika Ohta, Mutsumi Kimura, Mikio Yasutake, *Journal of Porphyrins and Phthalocyanines*, 2017, 21, 1-20.
8. Preparation and formation mechanism of porous carbon nanosheets by thermal decomposition of polyvinyl alcohol films impregnated with zinc(II) and nitrate ions, Yoshiyuki Hattori, Rikio Kojima, Kento Sagisaka, Motoki Umeda, Toshihisa Tanaka, Atsushi Kondo, Taku Iiyama, Mutsumi Kimura, Hiroyuki Fujimoto, Hidekazu Touhara, *Solid State Sciences*, 2017, 65, in press.
9. Carbazole-fused Zinc(II) Phthalocyanine Sensitizers, Mutsumi Kimura, Hiroyuki Suzuki, Yuki Tohata, Takuro Ikeuchi, Satoshi Yamamoto, and Nagao Kobayashi, *Asian Journal of Organic Chemistry*, 2017, in press.
10. Aggregation Control of Robust Water-soluble Zinc(II) Phthalocyanine-based Photosensitizers, Takuro Ikeuchi, John Mack, Tebello Nyokong, Nagao Kobayashi, and Mutsumi Kimura, *Langmuir*, 2016, in press.
11. Low-symmetrical ▶-shaped Zinc Phthalocyanine Sensitizers having a Panchromatic Light Harvesting Property for Dye-sensitized Solar Cells, Satoshi Yamamoto, Angel Zhang, Martin J. Stillman, Nagao Kobayashi and Mutsumi Kimura, *Chemistry A European Journal*, 2016, in press (Selected as frontispiece).
12. Interfacial Charge Transfer in Dye-Sensitized Solar Cells Using SCN Free Terpyridine Coordinated Ru Complex Dye and Co Complex Redox Couple, T. Kono, N. Masaki, M. Nishikawa, R. Tamura, H. Matsuzaki, M. Kimura, S. Mori, *ACS Applied Materials & Interfaces*, 2016, 8, 16677-16683.
13. Low-symmetrical Zinc(II) Benzonaphthoporphyrine Sensitizers for Light-Harvesting in Near-IR Region of Dye-Sensitized Solar Cells, T. Ikeuchi, S. Mori, N. Kobayashi, and M. Kimura, *Inorganic Chemistry*, 2016, 55, 5014-5018.
14. Contorted Arenes-fused Metallophthalocyanines, H. Suzuki, N. Kobayashi, and M. Kimura, *Asian Journal of Organic Chemistry*, 2016, 5, 506-512.
15. An Alkylphenyl Group as a Sterically Hindered Substituent on a Triphenylamine Donor Dye for Effective Recombination Inhibition in Dye-Sensitized Solar Cells, T. N. Murakami, N. Koumura, E. Yoshida, T. Funaki, S. Takano, M. Kimura, S. Mori, *Langmuir*, 2016, 32, 1178-1183.
16. Topological Control of Columnar Stacking made of Liquid-Crystalline Thiophene-fused Metallonaphthalocyanines, H. Suzuki, K. Kawano, K. Ohta, Y. Shimizu, N. Kobayashi, and M. Kimura, *ChemistryOpen*, 2016, 5, 150-156.
17. A Novel Covalently Linked Zn Phthalocyanine-Zn Porphyrin Dyad for Dye-sensitized Solar Cells, S. Yamamoto, S. Mori, P. Wagner, A. J. Mozer, and M. Kimura, *Israel Journal of Chemistry*, 2016, 56, 175-180.
18. Versatile Molding Process for Tough Cellulose Hydrogel Materials, M. Kimura, Y. Shinohara, J. Takizawa, S. Ren, K. Sagisaka, Y. Lin, J. P. Hinestroza, *Scientific Reports*, 2015, 5, 16266 (doi:10.1038/srep16266).

19. Zinc Phthalocyanine Sensitizer having Double Carboxylic Acid Anchoring Groups for Dye-Sensitized Solar Cells with Cobalt (II/III)-based Redox Electrolyte, M. Kimura, Y. Tohata, T. Ikeuchi, S. Mori, *RCS Advances*, 2015, 5, 82292-82295.
20. Enhanced Charge Separation Efficiency in Pyridine-anchor Phthalocyanine Sensitized Solar Cells by Elongation of Linker Length, T. Ikeuchi, S. Agrawal, M. Ezoe, S. Mori, M. Kimura, *Chem. Asian J.*, 2015, 10, 2347-2351.
21. Small Molecule Bulk-Heterojunction Solar Cells Composed of Two Discrete Organic Semiconductors, K. Takemoto and M. Kimura, *Chem. Lett.*, 2015, 44, 315-317.
22. Redox Responsive Polymer Incorporated with Mesogenic Unit and Bis(benzodithioly) bithienyl Scaffold, T. Ohtake, H. Tanaka, T. Matsumoto, M. Kimura, A. Ohta, *Heterocycles*, 2015, 90, 811-818.
23. Low Band Gap Disk-shaped Donors for Solution-Processed Organic Solar Cells, K. Takemoto and M. Kimura, *RSC Advances*, 2014, 4, 6289-6294.
24. Deformation of Redox-Active Polymer Gel Based on Polysiloxane Backbone and Bis(benzodithioly) bithienyl Scaffold, T. Ohtake, H. Tanaka, T. Matsumoto, A. Ohta, M. Kimura, *Langmuir*, 2014, 30, 14680-14685.
25. Supramolecular Complex Formation of Resorcin[4]arene-modified Zinc Phthalocyanine and Fullerene, H. Momose, H. Suzuki, and M. Kimura, *Journal of Porphyrins and Phthalocyanines*, 2014, 18, 843-848.
26. Detection of Volatile Organic Compounds by Weight-detectable Sensors coated with Metal-Organic Frameworks, H. Yamagiwa, S. Sato, T. Fukawa, T. Ikehara, R. Maeda, T. Mihara, and M. Kimura, *Scientific Reports*, 2014, 4, 6247.
27. Light-Harvesting in Near-Infrared Region: Dye-sensitized Solar Cells Sensitized with Asymmetric Ring-Expanded Zinc Phthalocyanines, S. Yamamoto, S. Mori, M. Kimura, *Asian Journal of Organic Chemistry*, 2014, 3, 1083-1088.
28. Redox-Driven Molecular Switches Consisting of Bis(benzodithioly) bithienyl Scaffold and Mesogenic Moieties: Synthesis and Complexes with Liquid Crystalline Polymer, T. Ohtake, H. Tanaka, T. Matsumoto, M. Kimura, A. Ohta, *Journal of Organic Chemistry*, 2014, 79, 6590-6602.
29. Dye Aggregation Effect on Interfacial Electron Transfer Dynamics in Zinc phthalocyanine-sensitized Solar Cells, H. Matsuzaki, T. Murakami, N. Masaki, A. Furube, M. Kimura, S. Mori, *Journal of Physical Chemistry C* 2014, 118, 17205-17212.
30. Design of a new energy-harvesting electrochromic window based on organic polymeric dye, cobalt couple and PProDOT-Me₂, E. Amasawa, N. Sasagawa, M. Kimura, M. Taya, *Advanced Energy Materials*, 2014, 4, 1400379.
31. Molecular Engineering of Zinc Phthalocyanine Sensitizers for Efficient Dye-Sensitized Solar Cell, T. Ikeuchi, H. Nomoto, N. Masaki, M. J. Griffith, S. Mori, M. Kimura, *Chemical Communications*, 2014, 50, 1941-1943 (Selected as inside cover).
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33. Foldable Textile Electronic Devices Using All-Organic Conductive Fibers, H. Miura, Y. Fukuyama, T. Sunda, B. Lin, J. Zhoh, J. Takizawa, A. Ohmori, M. Kimura, *Advanced Engineering Materials*, 2014, 16, 550-555 (Selected as cover).
34. Self-Organized One-dimensional Columns of Benzo[b]thiophene-fused Teteraazaporpyrins, H. Suzuki, N. Yamada, K. Nakayama, M. Kimura, *Journal of Porphyrins and Phthalocyanines*, 2014, 18, 259-266 (Selected as cover).

35. Development of PMMA-based gas sensor and its evaluation using a VOC dilution flow system, N. Shiraishi, M. Kimura, Y. Ando, *Microelectronic Engineering*, 2014, 119, 115-121.
36. Extension of Light-Harvesting Area of Bulk-heterojunction Solar Cells by Co-sensitization with Ring-expanded Metallophthalocyanines Fused with Fluorene Skeltons, S. Yamamoto, M. Kimura, *ACS Applied Materials & Interfaces*, 2013, 5, 4367-4373.
37. Molecular Design Rule of Phthalocyanine Dyes for Highly Efficient Near-IR Performance in Dye Sensitized Solar Cells, M. Kimura, H. Nomoto, H. Suzuki, T. Ikeuchi, H. Matsuzaki, T. N. Murakami, A. Furube, N. Masaki, M. J. Griffith, S. Mori, *Chemistry –A European Journal*, 2013, 19, 7496-7502.
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39. Recombination inhibit structure of organic dyes for cobalt complex redox electrolytes in dye-sensitized solar cells, T. N. Murakami, N. Koumura, T. Uchiyama, Y. Uemura, K. Obuchi, N. Masaki, M. Kimura, S. Mori, *Journal of Materials Chemistry A*, 2013, 1, 792-798.
40. Sub-Micron-Wide Surficial Trench Frames to Define the Coating Areas of Sensitive Layers on Silicon MEMS Resonant Chemical Sensors, S. Murakami, T. Ikehara, M. Konno, R. Maeda, T. Fukawa, M. Kimura, T. Mihara, *Electronics and Communications in Japan*, 2013, 96, 60-66.
41. Hydrophilic Nonwovens made of Cross-linked Fully Hydrolyzed Poly(vinyl alcohol) Electrospun Nanofibers, Q. Gao, J. Takizawa, M. Kimura, *Polymer*, 2013, 54, 120-126.
42. Improvement of TiO₂/Dye/Electrolyte Interface Conditions by Positional Change of Alkyl Chain in Modified Panchromatic Ru Complex Dye, M. Kimura, J. Masuo, Y. Tohata, K. Obuchi, N. Masaki, T. N. Murakami, N. Koumura, K. Hara, A. Fukui, R. Yamanaka, S. Mori, *Chemistry-An European Journal*, 2013, 19, 1028-1034.
43. Flexible Tactile Sensor using Reversible Deformation of Poly(3-hexylthiophene) Electrospun Nanofibers, Q. Gao, H. Meguro, S. Oakamoto, M. Kimura, *Langmuir*, 2012, 28, 17593-17596.
44. Solution-Processed Bulk-Heterojunction Solar Cells containing Self-Organized Disk-shaped Donors, K. Takemoto, M. Karasawa, M. Kimura, *ACS Applied Materials & Interfaces*, 2012, 4, 6289-6294.
45. Organic Sensitizers Including -Conjugated Fluorene-benzothiadiazole Bridge for Dye-Sensitized Solar Cells, M. Kimura, M. Karasawa, N. Sasagawa, K. Takemoto, R. Goto, S. Mori, *Chemistry Letters*, 2012, 41, 1613-1615.
46. Dye Molecules for Simple Co-Sensitization Process: Fabrication of Mixed-Dye-Sensitized Solar Cells, M. Kimura, H. Nomoto, N. Masaki, S. Mori, *Angewandte Chemie, International Edition*, 2012, 51, 4371-4374.
47. Sensing of Vaporous Organic Compounds by TiO₂ Porous Films Covered with Polythiophene Layers, M. Kimura, R. Sakai, S. Sato, T. Fukawa, T. Ikehara, R. Maeda, T. Mihara, *Advanced Functional Materials*, 2012, 22, 469-476.