

## **Koki Ikemoto**

Lecturer, Department of Chemistry, The University of Tokyo

Researcher, ERATO Isobe Degenerate  $\pi$ -Integration Project

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### **Education**

2009 B. S. in Chemistry (The University of Tokyo)

2011 M. S. in Applied Chemistry (The University of Tokyo)

2014 Ph. D. in Applied Chemistry (The University of Tokyo)

### **Academic Experience**

2011-2014 JSPS Research Fellowship for Young Scientists (DC1)

2014-2016 Assistant Professor, WPI-AIMR, Tohoku University

2014-present Researcher, ERATO Isobe Degenerate  $\pi$ -Integration Project, JST

2016-2019 Assistant Professor, Department of Chemistry, The University of Tokyo

2019-present Lecturer, Department of Chemistry, The University of Tokyo

### **Awards and Honors**

2020 The Chemical Society of Japan Award for Young Chemists for 2020

2019 CSJ Lecture Award for Young Chemists (Annual Meeting of The Chemical Society of Japan 2019)

2018 Organic & Biomolecular Chemistry Poster Prize (24th IUPAC International Conference on Physical Organic Chemistry)

2018 CSJ Presentation Award (Annual Meeting of The Chemical Society of Japan 2018)

2017 Inoue Research Award for Young Scientists

2014 CSJ Student Presentation Award (Annual Meeting of The Chemical Society of Japan 2014)

2013 Otsu Conference Award Fellow

2013 Student Presentation Award (The 63<sup>th</sup> Conference of the Japan Society of Coordination Chemistry)

2013 Student Presentation Award (Summer School of the Japan Society of Coordination Chemistry 2013)

2012 Poster Presentation Award (Summer School of the Japan Society of Coordination Chemistry 2012)

2010 Poster Presentation Award (5<sup>th</sup> International Symposium on Macrocyclic and Supramolecular Chemistry)

## List of Publications

1. "Curved Phenine Normal Vectors: Geometric Measures of Geodesic Phenine Frameworks"  
T. Mio, K. Ikemoto, H. Isobe  
*Chem. Asian J.* **2020**, DOI:10.1002/asia.202000271.
2. "Synthesis of a Hemispherical Geodesic Phenine Framework via a Polygon Assembling Strategy"  
T. Mio, K. Ikemoto, S. Sato, H. Isobe  
*Angew. Chem., Int. Ed.* **2020**, DOI:10.1002/anie.201915509.
3. "A Nitrogen-doped Nanotube Molecule with Atom Vacancy Defects"  
K. Ikemoto, S. Yang, H. Naito, M. Kotani, S. Sato, H. Isobe  
*Nat. Commun.* **2020**, accepted.
4. "Fluorescence Enhancement of Aromatic Macrocycles by Lowering Excited Singlet State Energies"  
K. Ikemoto, T. Tokuhira, A. Uetani, Y. Harabuchi, S. Sato, S. Maeda, H. Isobe  
*J. Org. Chem.* **2020**, *85*, 150–157.
5. "Duplex-forming Oligonucleotide of Triazole-linked RNA"  
T. Fujino, T. Suzuki, T. Ooi, K. Ikemoto, H. Isobe  
*Chem. Asian J.* **2019**, *14*, 3380–3385.
6. "Periphery Design of Macrocyclic Materials for Organic Light-emitting Devices with a Blue Phosphorescent Emitter"  
A. Yoshii, K. Ikemoto, T. Izumi, H. Taka, H. Kita, S. Sato, H. Isobe  
*Org. Lett.* **2019**, *21*, 2759–2762.
7. "Synthesis, Structures, and Assembly of Geodesic Phenine Frameworks with Isorecticular Networks of [*n*]Cyclo-*para*-phenylenes"  
Z. Sun, T. Mio, K. Ikemoto, S. Sato, H. Isobe  
*J. Org. Chem.* **2019**, *84*, 3500–3507.
8. "Finite Phenine Nanotubes with Periodic Vacancy Defects"  
Z. Sun, K. Ikemoto, T. M. Fukunaga, T. Koretsune, R. Arita, S. Sato, H. Isobe  
*Science* **2019**, *363*, 151–155.  
(Highlighted in "日経新聞")  
(Highlighted in "Physics World")  
(Highlighted in "Synfacts **2019**, *15*, 0369.")  
(Highlighted in "Nano Today **2019**, *25*, 2–3.")

(Highlighted in "C&EN 2019, 97, 9.")

9. "Fluctuating Carbonaceous Networks with a Persistent Molecular Shape: A Saddle-shaped Geodesic Framework of 1,3,5-Trisubstituted Benzene (Phenine) "  
K. Ikemoto, J. Lin, R. Kobayashi, S. Sato, H. Isobe  
*Angew. Chem. Int. Ed.* **2018**, *57*, 8555–8559.  
(Highlighted in "Synfacts 2018, 14, 0813.")
10. "Wavelength-dependent Magneto-electroluminescence Effects in Fluorescent Single-layer Organic Light-emitting Devices Comprising Macrocyclic Aromatic Hydrocarbons"  
S.-T. Pham, K. Ikemoto, K. Z. Suzuki, T. Izumi, H. Taka, H. Kita, S. Sato, H. Isobe, S. Mizukami  
*APL Mater.* **2018**, *6*, 026103.  
(Selected as Editor's pick)
11. "[n]Cyclo-3,6-phenanthrenylene: Synthesis, Structures and Fluorescence"  
Y. Tian, K. Ikemoto, S. Sato, H. Isobe  
*Chem. Asian J.* **2017**, *12*, 2093–2097.
12. "Entropy-driven Ball-in-bowl Assembly of Fullerene and Geodesic Phenylene Bowl"  
K. Ikemoto, R. Kobayashi, S. Sato, H. Isobe  
*Org. Lett.* **2017**, *19*, 2362–2365.
13. "Synthesis and Bowl-in-Bowl Assembly of a Geodesic Phenylene Bowl"  
K. Ikemoto, R. Kobayashi, S. Sato, H. Isobe  
*Angew. Chem., Int. Ed.* **2017**, *56*, 6511–6514.  
(Very Important Paper)  
(Selected as Inside Back Cover)  
(Highlighted in "Kagaku")  
(Highlighted in "Angew. Chem., Int. Ed. 2017, 56, 10642–10643. ")
14. "Efficient Blue Electroluminescence from a Single-layer Organic Device Composed Solely of Hydrocarbons"  
T. Izumi, Y. Tian, K. Ikemoto, A. Yoshii, T. Koretsune, R. Arita, H. Kita, H. Taka, S. Sato, H. Isobe  
*Chem. Asian J.* **2017**, *12*, 730–733.
15. "Structural Modulation of Macrocyclic Materials for Charge Carrier Transport Layers in Organic Light-Emitting Devices"  
A. Yoshii, K. Ikemoto, T. Izumi, H. Kita, H. Taka, T. Koretsune, R. Arita, S. Sato, H. Isobe  
*ECS J. Solid State Sci. Technol.* **2017**, *6*, M3065–M3067.

16. "Synthesis and Structures of  $\pi$ -Extended [ $n$ ]Cyclo-*para*-phenylenes ( $n = 12, 16, 20$ ) Containing  $n/2$  Nitrogen Atoms "  
K. Ikemoto, M. Fujita, P. C. Too, Y. L. Tnay, S. Sato, S. Chiba, H. Isobe  
**Chem. Lett.** **2016**, *45*, 658–660.  
(*Editor's choice*)
17. "Introduction of Nitrogen Atoms in [ $n$ ]Cyclo-*meta*-phenylenes via Cross Coupling Macrocyclization"  
J. Y. Xue, K. Ikemoto, S. Sato, H. Isobe  
**Chem. Lett.** **2016**, *45*, 676–678.
18. "One-pot Synthesis of [ $n$ ]Cyclo-1,3-pyrenylenes via Ni-mediated Macrocyclization"  
K. Ikemoto, S. Sato, H. Isobe  
**Chem. Lett.** **2016**, *45*, 217–219.
19. "Modular Synthesis of Aromatic Hydrocarbon Macrocycles for Simplified, Single-Layer Organic Light-Emitting Devices"  
K. Ikemoto, A. Yoshii, T. Izumi, H. Taka, H. Kita, J. Y. Xue, R. Kobayashi, S. Sato, H. Isobe  
**J. Org. Chem.** **2016**, *81*, 662–666.
20. "Aromatic Hydrocarbon Macrocycles for Highly Efficient Organic Light-Emitting Devices with Single-Layer Architecture "  
J. Y. Xue, T. Izumi, S. Yoshii, K. Ikemoto, T. Koretsune, R. Akashi, R. Arita, H. Taka, H. Kita, S. Sato, H. Isobe  
**Chem. Sci.** **2016**, *7*, 896–904.  
(*Selected as Inside Back Cover*)  
(*The 50 most downloaded Chemical Science articles of 2016*)
21. "Cyclo-*meta*-phenylene Revisited: Nickel-Mediated Synthesis, Molecular Structures and Device Applications"  
Y. J. Xue, K. Ikemoto, N. Takahashi, T. Izumi, H. Taka, H. Kita, S. Sato, H. Isobe  
**J. Org. Chem.** **2014**, *79*, 9735–9740.
22. "Networked-Cage Microcrystals for Evaluation of Host-Guest Interactions"  
S. Matsuzaki, T. Arai, K. Ikemoto, Y. Inokuma, M. Fujita  
**J. Am. Chem. Soc.** **2014**, *136*, 17899–17901.
23. "X-ray Snapshot Observation of Palladium-Mediated Aromatic Bromination in a Porous Complex"  
K. Ikemoto, Y. Inokuma, K. Rissanen, M. Fujita

*J. Am. Chem. Soc.* **2014**, *136*, 6892–6895.

(Highlighted in "Chemistry World")

24. "Diels–Alder via Molecular Recognition in a Crystalline Molecular Flask"

K. Ikemoto, Y. Inokuma, M. Fujita

*J. Am. Chem. Soc.* **2011**, *133*, 16806–16808.

25. "Shedding Light on Hidden Reaction Pathways in Radical Polymerization by a Porous Coordination Network"

Y. Inokuma, S. Nishiguchi, K. Ikemoto, M. Fujita

*Chem. Commun.* **2011**, *47*, 12113–12115.

26. "The Reaction of Organozinc Compounds with an Aldehyde within a Crystalline Molecular Flask"

K. Ikemoto, Y. Inokuma, M. Fujita

*Angew. Chem. Int. Ed.* **2010**, *49*, 5750–5752.

27. "Synthesis of Optically Active, Unnatural  $\alpha$ -substituted Glutamic Acid Derivatives by a Chiral Calcium-catalyzed 1,4-addition Reaction"

T. Tsubogo, Y. Kano, K. Ikemoto, Y. Yamashita, S. Kobayashi

*Tetrahedron: Asymmetry* **2010**, *21*, 1221–1225.