

重庆大学药学院

天然产物全合成与创新药物研究重庆市重点实验室

学术报告 第二百八十六讲

报告题目: New Reaction Chemistry of Organoiodine(III) Compounds

报告人: Naohiko Yoshikai 教授 (日本东北大学)

时 间: 2023年7月13日(周四) 20:00

地 点: 腾讯会议: 605-107-959

报告人简介:

Education

2005 Ph.D. (Chemistry)

Department of Chemistry, The University of Tokyo (Advisor: Prof. Eiichi Nakamura)

2002 M.Sc. (Chemistry)

Department of Chemistry, The University of Tokyo

2000 B.Sc. (Chemistry)

Department of Chemistry, The University of Tokyo

Professional Experience

2021.4–Present **Professor**

Graduate School of Pharmaceutical Sciences, Tohoku University

2016.9–2021.3 **Associate Professor (tenured)**

Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University

2009.7–2016.8 **Assistant Professor**

Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University

2009.7–2014.6 **Research Fellow**

Singapore National Research Foundation (NRF)

2005.2–2009.6 **Assistant Professor**

Department of Chemistry, The University of Tokyo

2002.4–2005.2 **JSPS Young Research Fellow**

Research Interests

Novel organic reaction chemistry toward efficient synthesis and new chemical spaces

Awards

2022 Mukaiyama Award



2020 Tokyo Chemical Industry (TCI)–Singapore National Institute of Chemistry (SNIC) Industry Award in Synthetic Chemistry
2015 Asian Core Program Lectureship (from Thailand)
2014 Chemical Society of Japan Award for Young Chemists
2014 Asian Core Program Lectureship (from China and Korea)
2011 Asian Core Program Lectureship (from Japan)
2011 Thieme Chemistry Journal Award
2007 Inoue Research Award for Young Scientists

Selected Publications

1. Saito, Y.; Kikuchi, J.; Wang, C.; Yoshikai, N. Site-Selective C–H Alkenylation of N-Heteroarenes by Ligand-Directed Co/Al and Co/Mg Cooperative Catalysis. *Angew. Chem. Int. Ed.* **2023**, *62*, e202301006.
2. Wang, C.-S.; Yu, Y.; Sunada, Y.; Wang, C.; Yoshikai, N. Cobalt-Catalyzed Carbo- and Hydrocyanation of Alkynes via C–CN Bond Activation. *ACS Catal.* **2022**, *12*, 4054-4066.
3. Chai, J.; Ding, W.; Wang, C.; Ito, S.; Wu, J.; Yoshikai, N. Ritter-Type Iodo(III)amidation of Unactivated Alkynes for the Stereoselective Synthesis of Multisubstituted Enamides. *Chem. Sci.* **2021**, *12*, 15128-15133.
4. Sekiguchi, Y.; Yoshikai, N. Zinc-Catalyzed β -Functionalization of Cyclopropanols via Enolized Homoenolate. *J. Am. Chem. Soc.* **2021**, *143*, 18400-18405.
5. Sekiguchi, Y.; Yoshikai, N. Enantioselective Conjugate Addition of Catalytically Generated Zinc Homoenolate. *J. Am. Chem. Soc.* **2021**, *143*, 4775-4781.
6. Wang, C.-S.; Sun, Q.; Garcia, F.; Wang, C.; Yoshikai, N. Robust Cobalt Catalyst for Nitrile/Alkyne [2+2+2] Cycloaddition: Synthesis of Polyarylpyridines and Their Mechanochemical Cyclodehydrogenation to Nitrogen-Containing Polyaromatics. *Angew. Chem. Int. Ed.* **2021**, *60*, 9627-9634.
7. Ding, W.; Wang, C.; Tan, J. R.; Ho, C. C.; León, F.; García, F.; Yoshikai, N. Site-selective aromatic C-H λ^3 -iodination with cyclic iodine(III) electrophile in solution and solid phases. *Chem. Sci.* **2020**, *11*, 7356-7361.
8. Ding, W.; Chai, J.; Wang, C.; Wu, J.; Yoshikai, N. Stereoselective Access to Highly Substituted Vinyl Ethers via *trans*-Difunctionalization of Alkynes with Alcohols and Iodine(III) Electrophile. *J. Am. Chem. Soc.* **2020**, *142*, 8619-8624.
9. Wang, C.-S.; Di Monaco, S.; Thai, A. N.; Rahman, M. S.; Pang, B. P.; Wang, C.; Yoshikai, N. Cobalt/Lewis Acid Catalysis for Hydrocarbofunctionalization of Alkynes via Cooperative C–H Activation. *J. Am. Chem. Soc.* **2020**, *142*, 12878-12889.
10. Yang, J.; Sekiguchi, Y.; Yoshikai, N. Cobalt-Catalyzed Enantioselective and Chemodivergent Addition of Cyclopropanols to Oxabicyclic Alkenes. *ACS Catal.* **2019**, *9*, 5638-5644.
11. Yang, J.; Sun, Q.; Yoshikai, N. Cobalt-Catalyzed Regio- and Diastereoselective Formal [3+2] Cycloaddition between Cyclopropanols and Allenes. *ACS Catal.* **2019**, *9*, 1973-1978.
12. Ding, W.; Yoshikai, N. Cobalt-Catalyzed Intermolecular [2+2] Cycloaddition between Alkynes and Allenes. *Angew. Chem. Int. Ed.* **2019**, *58*, 2500-2504.
13. Yang, J.; Shen, Y.; Lim, Y. J.; Yoshikai, N. Divergent ring-opening coupling between

- cyclopropanols and alkynes under cobalt catalysis. *Chem. Sci.* **2018**, *9*, 6928-6934.
14. Wu, C.; Yoshikai, N. Cobalt-Catalyzed Intramolecular Reactions between a Vinylcyclopropane and an Alkyne: Switchable [5+2] Cycloaddition and Homo-Ene Pathways. *Angew. Chem. Int. Ed.* **2018**, *57*, 6558-6562.
15. Tan, W. W.; Ong, Y. J.; Yoshikai, N. Synthesis of Highly Substituted Pyridines through Copper-Catalyzed Condensation of Oximes and α,β -Unsaturated Imines. *Angew. Chem. Int. Ed.* **2017**, *56*, 8240-8244.
16. Yang, J.; Rérat, A.; Lim, Y. J.; Gosmini, C.; Yoshikai, N. Cobalt-Catalyzed Enantioand Diastereoselective Hydroacylation of Trisubstituted Alkenes. *Angew. Chem. Int. Ed.* **2017**, *56*, 2449-2453.