

# Zhongxing Huang

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## Positions

- 2019-current      **Assistant Professor, University of Hong Kong**  
2017-2019        **Postdoctoral Fellow, Stanford University**  
                      Advisor: Professor Barry M. Trost

## Education

- 2012-2017        **Ph.D. in Chemistry, University of Chicago**  
                      Advisor: Professor Guangbin Dong  
2008-2012        **B.S. in Chemistry, Peking University**  
                      Advisor: Professor Jianbo Wang and Professor Yan Zhang

## Awards and Honors

1. Thieme Chemistry Journals Award (2023)
2. Research Output Prize (HKU, 2022)
3. Asian Core Program Lectureship Award (to Korea and Taiwan, 2022)
4. Chinese Government Award for Outstanding Self-Financed Students Abroad (2015)
5. International Precious Metals Institute (IPMI) Elemental graduate student award (2015)
6. BaoSteel Scholarship, Peking University (2010)

## Publications

Independent research:

1. Liu, Haichao; Lau, H. M.; Xu, P.; Chan, T. H.; **Huang, Z.\***, "Modular and Diverse Synthesis of  $\alpha$ -Tertiary Amines and Tertiary Alcohols via Desymmetric Reduction of Malonic Esters", *Nat. Commun.* **2022**, *13*, 4759.
  - Highlighted by H. Yamamoto and T. Hattori in *Synfacts*, **2022**, *18*, 1384.
2. Xu, Pan; Shen, C.; Xu, A.; Low, K.-H.; **Huang, Z.\***, "Desymmetric Cyanosilylation of Acyclic 1,3-Diketones", *Angew. Chem. Int. Ed.* **2022**, *61*, e202208443.
  - Highlighted in Angewandte Chemie Author Profile, *Angew. Chem. Int. Ed.* **2022**, *61*, e202212025.
3. Xu, Pengwei; Liu, S.; **Huang, Z.\***, "Desymmetric Partial Reduction of Malonic Esters", *J. Am. Chem. Soc.* **2022**, *144*, 6918-6927.
  - Selected by ACS Editors' Choice.
  - Highlighted by S. Chakrabarty in JACS Spotlights, **2022**, *144*, 6623-6624.
4. Zheng, Yin; Zhang, S.; Low, K.-H.; Zi, W.; **Huang, Z.\***, "A Unified and Desymmetric Approach to Chiral Tertiary Alkyl Halides", *J. Am. Chem. Soc.* **2022**, *144*, 1951-1961.
  - Highlighted by M. Oestreich, H. F. T. Klare, and N. Kranidiotis-Hisatomi in *Synfacts*, **2022**, *18*, 0518.
5. Xu, Pan; **Huang, Z.\***, "Sewing Molecules Together with Light", *Trends Chem.* **2022**, *4*, 169-171 (invited highlight).
6. Xu, Pengwei; **Huang, Z.\***, "Catalytic Reductive Desymmetrization of Malonic Esters", *Nat. Chem.* **2021**, *13*, 634.
  - Highlighted by J. Gajewy and M. Kwit in *Nat. Chem.* **2021**, *13*, 623-624, "The gains from breaking symmetry"
  - Highlighted by L. Boerner in *C&EN News*, "Reduction carves path to chiral compounds"
  - Highlighted by G. R. Stephenson in *Chemistry&Industry*.
  - Featured in *Organic Chemistry Portal*.

Supervised research:

7. Trost, B. M.\*; Wang, Y.; Buckl, A. K.; **Huang, Z.**; Nguyen, M. H.; Kuzmina, O., "Total Synthesis of Bryostatin 3", *Science* **2020**, 368, 1007.
8. Trost, B. M.\*; **Huang, Z.**, "Catalytic (3+2) Palladium-Aminoallyl Cycloaddition with Conjugated Dienes", *Angew. Chem. Int. Ed.* **2019**, 58, 6396.
9. Trost, B. M.\*; **Huang, Z.**; Murhade, G. M., "Catalytic Palladium-Oxyallyl Cycloaddition", *Science* **2018**, 362, 564.
10. **Huang, Z.**; Dong, G.\*, "Palladium-Catalyzed Redox Cascade for Direct  $\beta$ -Arylation of Ketones", *Tetrahedron* **2018**, 74, 3253.
11. Zhu, Z.; Li, X.; Chen, S.; Chen, P.; Billett, B.; **Huang, Z.**; Dong, G.\*, "Cobalt-Catalyzed Intramolecular Alkyne/Benzocyclobutenone Coupling: C–C Bond Cleavage via a Tetrahedral Dicobalt Intermediate", *ACS Catal.* **2018**, 8, 845.
12. **Huang, Z.**; Dong, G.\*, "Site-Selectivity Control in Organic Reactions: A Quest to Differentiate Reactivity among the Same Kind of Functional Groups", *Acc. Chem. Res.* **2017**, 50, 465 (Invited commentary).
13. **Huang, Z.**; Wang, C.; Dong, G.\*, "A Hydrazone-Based Directing Group Strategy for  $\beta$ -C–H Oxidation of Aliphatic Amines", *Angew. Chem. Int. Ed.* **2016**, 55, 5209.
  - Highlighted by *Organic Chemistry Portal*, Jan. 2017
14. Xu, Y.; Su, T.; **Huang, Z.**; Dong, G.\*, "Practical Direct  $\alpha$ -Arylation of Simple Cyclopentanones via Palladium-Enamine Cooperative Catalysis", *Angew. Chem. Int. Ed.* **2016**, 55, 2559.
15. **Huang, Z.**; Lim, H. N.; Mo, F.; Young, M.; Dong, G.\*, "Transition Metal-Catalyzed Ketone-Directed or Mediated C–H Functionalization", *Chem. Soc. Rev.*, **2015**, 44, 7764 (invited review).
16. **Huang, Z.**; Sam, Q. P.; Dong, G.\*, "Palladium-Catalyzed Direct  $\beta$ -Arylation of Ketones with Diaryliodonium Salts: a Stoichiometric Heavy Metal-Free and User-Friendly Approach", *Chem. Sci.* **2015**, 6, 5491.
17. **Huang, Z.**; Dong, G.\*, "Catalytic C–C Bond Forming Transformations via Direct  $\beta$ -C–H Functionalization of Carbonyl Compounds", *Tetrahedron Lett.* **2014**, 55, 5869 (invited review).
18. **Huang, Z.**; Dong, G.\*, "Catalytic Direct  $\beta$ -Arylation of Simple Ketones with Aryl Iodides", *J. Am. Chem. Soc.* **2013**, 135, 17747.
  - Highlighted by *C&EN News*, "Metal Duo Makes  $\beta$ -Aryl Ketones"
  - Highlighted by *SynForm*, **2014**, 2.
  - Highlighted by *Organic Chemistry Portal*, Sep. 2014
19. **Huang, Z.**; Yang, Y.; Xiao, Q.; Zhang, Y.; Wang, J.\*, "Auto-Tandem Catalysis: Synthesis of Acridines by Pd-Catalyzed C=C Bond Formation and C( $sp^2$ )-N Cross-Coupling", *Eur. J. Org. Chem.* **2012**, 6586.
20. Xia, Y.; Qu, S.; Xiao, Q.; Wang, Z.; Qu, P.; Chen, L.; Liu, Z.; Tian, L.; **Huang, Z.**; Zhang, Y.; Wang, J.\*, "Palladium-Catalyzed Carbene Migratory Insertion Using Conjugated Ene-Yne-Ketones as Carbene Precursors", *J. Am. Chem. Soc.* **2013**, 135, 13502.
21. Li, Y.; **Huang, Z.**; Xu, P.; Zhang, Y.\*; Wang, J.\*, "Studies on the Reactivity of Migrating Group in [2,3]-Sigmatropic Rearrangement of Sulfur Ylides", *Acta Chimica Sinica* **2012**, 70, 2024.
22. Li, Y.; **Huang, Z.**; Wu, X.; Xu, P.; Jin, J.; Zhang, Y.; Wang, J.\*, "Rh(II)-Catalyzed [2,3]-Sigmatropic Rearrangement of Sulfur Ylides derived from *N*-Tosylhydrazones and Sulfides", *Tetrahedron* **2012**, 68, 5234.
23. Li, Y.; Shi, Y.; **Huang, Z.**; Wu, X.; Xu, P.; Zhang, Y.; Wang, J.\*, "Catalytic Thia-Sommelet-Hauser Rearrangement: Application to the Synthesis of Indolin-2-ones", *Org. Lett.* **2011**, 13, 1210.

### Patents

1. Dong, G.; **Huang, Z.**, "Direct  $\beta$ -Arylation of Carbonyl Compounds", US Patent App 20160229778 A1.

### Invited lectures

Hong Kong University of Science and Technology, Hong Kong, China, Jan 27, 2023

University of Melbourne, Melbourne, Australia, Nov 7, 2022.

15th International Conference on Cutting-Edge Organic Chemistry in Asia, Hong Kong, China, Jul 25, 2022