

Yong Huang

Xili University Town, Peking University Campus, Shenzhen, China 518055

Mobile: 15012670289

huangyong@pkusz.edu.cn

Group website: <http://web.pkusz.edu.cn/huang>

EDUCATION & TRAINING

M.S., Ph.D. (The University of Chicago) 09/1997-08/2002

- Advisor: Viresh H. Rawal
- Chiral alcohol catalyzed asymmetric reactions
- Rationale design of highly selective chiral Lewis acids for Diels-Alder reactions
- Total synthesis of *Aspidosperma* alkaloids

B.S. (Peking University) 08/2004-05/2009

- Advisor: Xiulin Ye
- Total synthesis of lignin family of natural products.

EMPLOYMENT EXPERIENCE

Professor, Peking University (Shenzhen, China) 06/2009-present

- Principal Investigator: synthetic methodology development; medicinal chemistry
- Director, Shenzhen Public Platform for Drug Screening and Preclinical Efficacy Evaluation

Senior Scientist, Merck & Co. (Rahway, NJ) 08/2004-05/2009

- Lead optimization on various drug targets.
- Supervise master level scientists on medicinal chemistry projects.

Postdoctoral Fellow, Caltech (Pasadena, CA) 10/2002-07/2004

- Advisor: David W. C. MacMillan
- Enantioselective organo cascade reactions.

ACADEMIC RECOGNITION

- 2014, Roche Chinese Young Investigator Award
- 2014, Bayer Investigator Award
- 2014, ACS and *Organic Letters* "Outstanding Author of the Year"
- 2014, Shenzhen Outstanding Teachers
- 2014, Special Allowance from the Shenzhen Municipality
- 2013, Asia Core Program Lectureship Award (Japan and Thailand)
- 2013, New Century Excellent Talents in University, MOE
- 2010, Distinguished Young Scholars, Shenzhen
- 2009, "Pengcheng" Professorship

PUBLICATIONS:

Publications as a Principal Investigator at Peking University, Shenzhen Graduate School

1. Zhenxing Zhang, Hao Jiang, **Yong Huang*** "Ruthenium-Catalyzed Redox-Neutral C-H Activation via N-N Cleavage: Synthesis of N-Substituted Indoles" *Org. Lett.* **2014**, *16*, ASAP, DOI: o1502998n.
2. Huan Sun, Chengming Wang, Yun-Fang Yang, Ping Chen, Yun-Dong Wu*, Xinhao Zhang*, **Yong Huang*** "Synthesis of Indolo[2,1-a]isoquinolines via a Triazene-Directed C-H Annulation Cascade" *J. Org. Chem.* **2014**, *79*, ASAP, DOI: jo500807d.
3. Yi Zhang, Qian Wang, Huidong Yu*, **Yong Huang***, "Directed Arene/alkyne Annulation Reactions via Aerobic Copper Catalysis" *Org. Biomol. Chem.* **2014**, *12*, 8844-8850.

4. Weiyu Yin, Zhaofeng Wang, **Yong Huang***, "Highly *ortho*-Selective Trifluoromethyl-thiolation Reactions using a Ligand Exchange Strategy" *Adv. Synth. Catal.* **2014**, 356, 2998-3006.
5. Zhaofeng Wang, Li Li, **Yong Huang***, "A General Synthesis of Ynones from Aldehydes via Oxidative C–C bond Cleavage under Aerobic Conditions" *J. Am. Chem. Soc.* **2014**, 136, 12233-12236.
6. Ying Chen, Dongqi Wang, Pingping Duan, Rong Ben, Lu Dai, Xiaoru Shao, Mei Hong, Jing Zhao*, **Yong Huang*** "A multitasking functional group leads to structural diversity using designer C–H activation reaction cascades" *Nat. Commun.* **2014**, 5, 5610.
7. Jiean Chen, **Yong Huang*** "Asymmetric Catalysis with N-Heterocyclic Carbenes as Non-Covalent Chiral Templates" *Nat. Commun.* **2014**, 5, 3437.
8. Tao Cheng, Weiyu Yin, Yi Zhang, Yingnan Zhang, **Yong Huang*** "Palladium catalyzed acetoxylation of benzylic C–H bonds using a bidentate picolinamide directing group" *Org. Biomol. Chem.* **2014**, 12, 1405-1411.
9. Yan Fang, Chengming Wang, Shengqin Su, Haizhu Yu*, **Yong Huang*** "Selective synthesis of indazoles and indoles via triazene–alkyne cyclization switched by different metals" *Org. Biomol. Chem.* **2014**, 12, 1061-1071.
10. Zhaofeng Wang, Xijian Li, **Yong Huang*** "Direct α -Vinylideneation of Aldehydes and Subsequent Cascade: Gold and Amine Catalysts Work Synergistically" *Angew. Chem. Int. Ed.* **2013**, 52, 14219-14223.
11. Junlin Zhang, Leming Wang, Qi Liu, Zhen Yang*, **Yong Huang*** "Synthesis of α,β -unsaturated carbonyl compounds via a visible-light-promoted organocatalytic aerobic oxidation" *Chem. Commun.* **2013**, 49, 11662-11664.
12. Chengming Wang, **Yong Huang*** "Traceless Directing Strategy: Efficient Synthesis of N-Alkyl Indoles via Redox-Neutral C-H Activation" *Org. Lett.* **2013**, 15, 5294-5297.
13. Qian Shao, Jiean Chen, Meihua Tu, David W. Piotrowski, **Yong Huang*** "Enantioselective Synthesis of 1,2,4-Triazolines Catalyzed by a Cinchona Alkaloid-derived Organocatalyst" *Chem. Commun.* **2013**, 49, 11098-11100.
14. Jiye Zhao, Shixian Lin, **Y. Huang**, J. Zhao*, Peng R. Chen* "Mechanism-based Design of a Photo-activatable Firefly Luciferase" *J. Am. Chem. Soc.* **2013**, 135, 7410-7413.
15. Chaosheng Luo, **Yong Huang*** "A Highly Diastereo- and Enantioselective Synthesis of Tetrahydroquinolines: Quaternary Stereogenic Center Inversion and Functionalization" *J. Am. Chem. Soc.* **2013**, 135, 8193-8196.
16. Chengming Wang, Huan Sun, Yan Fang, **Yong Huang*** "General and Efficient Synthesis of Indoles through Triazene-Directed C-H Annulation" *Angew. Chem. Int. Ed.* **2013**, 52, 5795-5798.
17. Tao Cheng, Sixuan Meng, **Yong Huang*** "A Highly Diastereoselective and Enantioselective Synthesis of Polysubstituted Pyrrolidines via an Organocatalytic Dynamic Kinetic Resolution Cascade" *Org. Lett.* **2013**, 15, 1958-1961.
18. Weiyu Yin, Chengming Wang, **Yong Huang*** "Highly Practical Synthesis of Nitriles and Heterocycles from Alcohols under Mild Conditions by Aerobic Double Dehydrogenative Catalysis" *Org. Lett.* **2013**, 15, 1850-1853.
19. Hu Chen, Zhaofeng Wang, Yingnan Zhang, **Yong Huang***, "Highly Trans-stereoselective Synthesis of Bicyclic Isoxazolidines via Copper-catalyzed Triple Cascade Catalysis" *J. Org. Chem.* **2013**, 78, 3503-3509.

20. Qi Zhang , Hai-Zhu Yu , Yi-Tong Li , Lei Liu, **Yong Huang***, Yao Fu*, "Computational Study on Mechanism of Rh(III)-catalyzed Oxidative Heck Coupling of Phenol Carbamates with Alkenes" *Dalton Trans.* **2013**, 42, 4175-4184.
21. Chengming Wang, **Yong Huang***, "Expanding Structural Diversity; Removable and Manipulable Directing Groups for C-H Activation" *Synlett* **2013**, 24, 145-149 (**invited Synpacts**).
22. **Yong Huang**, Weiming Gao*, Torbjörn Åkermark, Mingrun Li, Björn Åkermark*, "An Air-State Fe₃S₄ Complex with Properties Similar to Those of The HOXair State of The Diiron Hydrogenases" *Eur. J. Inorg. Chem.* **2012**, 27, 4259-4263.
23. Chengming Wang, Hu Chen, Zhaofeng Wang, Jian Chen, **Yong Huang***, "Rhodium(III)-Catalyzed C-H Activation of Arenes Using a Versatile and Removable Triazene Directing Group", *Angew. Chem. Int. Ed.* **2012**, 51, 7242-7245.
24. Guiyong Wu, Weiyu Yin, Hong C. Shen*, and **Yong Huang***, "One-pot Synthesis of Useful Heterocycles in Medicinal Chemistry Using a Cascade Strategy" *Green Chem.* **2012**, 14, 580-585.
25. Weiming Gao, Zhiqi He, Yong Qian, Jing Zhao*, **Yong Huang*** "General Palladium-catalyzed Aerobic Dehydrogenation to Generate Double bonds" *Chem. Sci.* **2012**, 3, 883-886.
26. Ying-Xiang Gao, Le Chang, Hang Shi, Bo Liang, Kittiya Wongkhan, Duangduan Chaiyavej, Andrei.S. Batsanov, Todd.B. Marder*, Chuang-Chuang Li*, Zhen Yang*, **Yong Huang*** "A Thiourea-Oxazoline Library with Axial Chirality: Ligand Synthesis and Studies of The Palladium-catalyzed Enantioselective Bis(methoxycarbonylation) of Terminal Olefins" *Adv. Synth. Catal.* **2010**, 352, 1955-1966.

Patents issued at Peking University, Shenzhen Graduate School

1. Yong Huang, Weiyu Yin "A method to prepare nitrile compounds" *Issued Chinese patent*, 201210447319.X, Jul. 09th, 2014.

Publications prior to joining Peking University, Shenzhen Graduate School

1. Jason W Szewczyk*, John Acton, Alan D Adams, Gary Chicchi, Stanley Freeman, Andrew D Howard, **Yong Huang**, Rachel Samuel, Meng Yang, Kake Zhao, Harold B Wood "Design of Potent and Selective GPR119 Agonists for Type II Diabetes" *Bioorg. Med. Chem. Lett.* **2011**, 21, 2665-2669.
2. Avinash N. Thadani, **Yong Huang**, Viresh H. Rawal "Expedient High-yielding Synthesis of Silyl-substituted Salen Ligands" *Org. Lett.* **2007**, 9, 3873-3876.
3. **Yong Huang**, Abbas M. Walji, Catharine H. Larsen, David W. C. MacMillan* "Enantioselective Organo-cascade Catalysis" *J. Am. Chem. Soc.* **2005**, 127, 15051-15053.
4. **Yong Huang**, Aditya K. Unni, Avinash N. Thadani, Viresh H. Rawal* "Hydrogen Bonding: a Chiral Alcohol Catalyzes Highly Enantioselective Reactions" *Nature* **2003**, 424, 146.
5. Norito Takenaka, **Yong Huang**, Viresh H. Rawal* "The First Catalytic Enantioselective Diels-Alder Reactions of 1,2-Dihydropyridine: Efficient Syntheses of Optically Active 2-Azabicyclo[2.2.2]octanes with Chiral BINAM Derived Cr(III) Salen Complexes" *Tetrahedron* **2002**, 58, 8299-8305.
6. **Yong Huang**, Viresh H. Rawal* "Hydrogen bond promoted hetero Diels-Alder reactions of ketones" *J. Am. Chem. Soc.* **2002**, 124, 9662-9663.
7. **Yong Huang**, Tetsuo Iwama, Viresh H. Rawal* "Design and Development of Highly Effective Lewis Acid Catalysts for Enantioselective Diels-Alder Reactions" *J. Am. Chem. Soc.* **2002**, 124, 5950-5951.

8. Sergey A. Kozmin, Tetsuo Iwama, **Yong Huang**, Viresh H. Rawal* "An Efficient Approach to Aspidosperma Alkaloids via [4+2] Cycloadditions of Aminosiloxydienes: Stereocontrolled Total Synthesis of (±)-Tabersonine. Gram-scale Catalytic Asymmetric Syntheses of (+)-Tabersonine and (+)-16-Methoxytabersonine. Asymmetric Syntheses of (+)-Aspidospermidine and(-)-Quebrachamine" *J. Am. Chem. Soc.* **2002** 124, 4628-4641.
9. **Yong Huang**, Tetsuo Iwama, Viresh H. Rawal* "Broadly Effective Enantioselective Diels-Alder Reactions of 1-Amino-substituted-1,3-butadienes" *Org. Lett.* **2002**, 4, 1163-1166.
10. **Yong Huang**, Tetsuo Iwama, Viresh H. Rawal* "Highly Enantioselective Diels-Alder Reactions of 1-Amino-3-siloxy-dienes Catalyzed by Cr(III)-Salen Complexes" *J. Am. Chem. Soc.* **2000**, 122, 7843-7844.
11. **Yong Huang**, Viresh. H. Rawal* "Hetero Diels-Alder Reactions of 1-Amino-3-siloxy-1,3-butadiene under Strictly Thermal Conditions" *Org. Lett.* **2000**, 2, 3321-3323.

Patents issued prior to joining Peking University, Shenzhen Graduate School

1. Jason W. Szewczyk, **Yong Huang**, Alan D. Adams "SUBSTITUTED CYCLOPROPYL COMPOUNDS, COMPOSITIONS CONTAINING SUCH COMPOUNDS AND METHODS OF TREATMENT", *US 8,343,990*, Jan. 01st, 2013.
2. Harold B. Wood, Alan D. Adams, Stanley Freeman, Jason W. Szewczyk, Conrad Santini, **Yong Huang** "BIPIPERIDINYL COMPOUNDS, COMPOSITIONS, CONTAINING SUCH COMPOUNDS AND METHODS OF TREATMENT", *US 8,445,499*, May 21st, 2013.
3. Harold B. Wood, Alan D. Adams, Stanley Freeman, Jason W. Szewczyk, Conrad Santini, **Yong Huang**, Ralph T. Mosley "ACYL BIPIPERIDINYL COMPOUNDS USEFUL AS GPR 119 AGONISTS", *US 8,399,485*, May 19th, 2013.
4. Harold B. Wood, Jason W. Szewczyk, **Yong Huang**, Alan D. Adams "SUBSTITUTED CYCLOPROPYL COMPOUNDS, COMPOSITIONS CONTAINING SUCH COMPOUNDS AND METHODS OF TREATMENT", *EP 2 297 129*, Jul. 24th, 2013.
5. Viresh H. Rawal, **Yong Huang**, Aditya K. Unni, Avinash N. Thadani "METHODS OF PERFORMING CYCLOADDITIONS, REACTION MIXTURES, AND METHODS OF PERFORMING ASYMMETRIC CATALYTIC REACTIONS", *US 7,230,125*, Jun. 07th, 2007.