

Gang Li, Ph.D.

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Academic Appointments

- Utah State University, Logan, UT 84322
Assistant Professor in Chemistry, 2019-present
Research areas: Development and use of bioinspired metal catalysts for novel organic transformations; Elucidating the mechanism of transition metal catalyzed reactions; late-stage diversification of pharmaceutical molecules.

Education and Professional Training

- Princeton University, Princeton, NJ 08544
Bristol-Myers Squibb Postdoctoral Fellow, 2015-2019
Research areas: Development of novel biomimetic catalyst for C-H functionalization based on cytochrome P450 enzymes (Advisor: Prof. John T. Groves)
- Columbia University, New York, NY 10027
Ph.D. in Inorganic Chemistry, August 2015
Research areas: Mechanistic study and synthetic application of transition-metal complexes catalyzed hydrogen atom transfer reactions (Advisor: Prof. Jack R. Norton)
- Wuhan University, Wuhan, Hubei, China
B.S. Chemistry, June 2010
Undergraduate research: Palladium catalyzed oxidative acetoxylation and carbonylation reactions (Advisor: Prof. Aiwen Lei)

Awards and Honors

Bristol Myers Squibb Postdoctoral Fellowship, Princeton University, 2015-2019
Reaxys PhD Prize Finalist, Elsevier Inc., 2015
Pegram Award in Meritorious Graduate Research, Columbia University, 2015
Jack Miller Award in Excellent Teaching, Columbia University, 2012
Faculty Fellowship, Columbia University, 2010-2015
Graduate with honor, Wuhan University, 2010.
Outstanding Undergraduate Thesis Award, Hubei Province, P. R. China, 2010.

Publications

Asterisk* indicates corresponding author

Underline indicates a graduate student author

Double Underline indicates an undergraduate student author

Invited Book Chapters and Perspectives

2). Wan, Y.; Tan, L.; Wu, K.; **Li, G.***, "Bioinspired C(sp³)-H Functionalization by High-Valent Iron/Manganese Oxo Complexes and Applications in Organic Syntheses", in *Handbook of C-H Functionalization* (Editor: D. Maiti), John Wiley & Sons, New York, NY; **2022**.

1). Wu, W.; **Li, G.***; Liu, T. L.*, "Chloride-Mediated Electrochemical Synthesis of Oxazolines", *Chem Catal.*, **2021**, *1*, 966.

Peer Reviewed Publications

Journal publications since joining Utah State University (work under review included):

19). Tan, L.; Boehme, M.; Papworth, L.; Wu, K.; **Li, G.***, "Catalytic Cyclopropanation of Steric-hindered Carbene Precursors Mediated by Cobaloxime", *under review*

18). Wu, K.; Wan, Y.; Ford, A.; Phillips, E.; Tan, L.; Waidmann, L.; Davis, K. M.; **Li, G.***, "Streamlined Synthesis of α -Amino Esters via Co-Catalyzed Carbene Insertion into N-H Bonds", *under review*

17). Wan, Y.; Ramirez, E.; Ford, A.; Zhang, H. K.; Norton, J. R.*; **Li, G.***, “Cooperative Fe/Co-Catalyzed Remote Desaturation for the Synthesis of Unsaturated Amide Derivatives”, *J. Am. Chem. Soc.*, **2024**, *146*, 4985-4992. DOI: 10.1021/jacs.3c14481

16). Wan, Y.; Adda, A. K.; Qian, J.; Vaccaro, D.; He, P.; **Li, G.***; Norton, J. R.*, “Hydrogen Atom Transfer (HAT)-Mediated Remote Desaturation Enabled by Fe/Cr–H Cooperative Catalysis”, *J. Am. Chem. Soc.*, **2024**, *146*, 4795-4802. DOI: 10.1021/jacs.3c13085

15). Tan, L.; Wu, K.; **Li, G.***, “Rapid Olefin Cyclopropanation Catalyzed by a Bioinspired Cobalt Complex”, *Chem. Asian J.*, **2023**, e202300873. DOI: 10.1002/asia.202300873. Highlighted by “Hot Topic: Earth-Abundant Transition Metal Catalysis” in *European Journal of Organic Chemistry*.

14). Wan, Y.; Ramirez, E.; Ford, A.; Bustamante, V.; **Li, G.***, “Fe-Catalyzed C(sp³)–H Diversification toward γ -Functionalized Amides via Iron Nitrenoid: Mechanistic Insights and Applications”, *ACS Catal.* **2023**, *13*, 14023-14030. DOI: 10.1021/acscatal.3c03679.

13). Han, J.; Tan, L.; Wan, Y.; **Li, G.***; Anderson, S. N., “C(sp³)–H Oxidation and Chlorination Catalysed by A Bioinspired Pincer Iron(III) Complex”, *Dalton Trans.*, **2022**, *51*, 11620-11624. DOI: 10.1039/D2DT02005J.

12). Wang, Y.; Zhu, L.; Shao, Z.; **Li, G.**; Lan, Y.; Liu, Q.*, “Unmasking the Ligand Effect in Manganese-Catalyzed Hydrogenations: Mechanistic Insight and Catalytic Application”, *J. Am. Chem. Soc.* **2019**, *141*, 17337.

Published prior to Utah State University:

11). **Li, G.**; Kates, P. A.; Dilger, A. K.; Cheng, P. T.; Ewing, W. R.; Groves, J. T., “Manganese Catalyzed Desaturation of N-Acyl Amines and Ethers”, *ACS Catal.* **2019**, *9*, 9513. DOI: 10.1021/acscatal.9b03457. Impact Factor: 13.700

10). **Li, G.**; Dilger, A. K.; Cheng, P. T.; Ewing, W. R.; Groves, J. T., “Selective C-H Halogenations with a Highly Fluorinated Manganese Porphyrin”, *Angew. Chem. Int. Ed.* **2018**, *57*, 1251. DOI: 10.1002/anie.201710676. Impact Factor: 16.823

9). **Li, G.**; Kuo, J. L.; Han, A.; Abuyuan, J. M.; Young, L. C.; Norton, J. R.; Palmer, J. H., “Radical Isomerization and Cycloisomerization Initiated by H• Transfer”, *J. Am. Chem. Soc.* **2016**, *138*, 7698. DOI: 10.1021/jacs.6b03509. Impact Factor: 16.383

8). **Li, G.**; Estes, D. P.; Norton, J. R.; Satler, W.; Ruccolo, S., “Dihydrogen Activation by Cobaloximes with Various Axial Ligands”, *Inorg. Chem.* **2014**, *53*, 10743. DOI: 10.1021/ic501975r. Impact Factor: 5.436

7). Norton, J. R.; Spataru, T.; Camaioni, D. M.; Lee, S. –J.; **Li, G.**; Choi, J.; Franz, J. A., “Kinetics and Mechanism of the Hydrogenation of the CpCr(CO)₃•/[CpCr(CO)₃]₂ Equilibrium to CpCr(CO)₃H”, *Organometallics* **2014**, *33*, 2496. DOI: 10.1021/om4012399. Impact Factor: 3.837

6). Han, A.; Spataru, T.; Hartung, J.; **Li, G.**; Norton, J. R., “Effect of Double-Bond Substituents on the Rate of Cyclization of α -Carbomethoxyhex-5-enyl Radicals”, *J. Org. Chem.* **2014**, *79*, 1938. DOI: 10.1021/jo402499w. Impact Factor: 4.198

5). **Li, G.**; Han, A.; Pulling, M. E.; Estes, D. P.; Norton, J. R., “Evidence for Formation of a Co–H Bond from (H₂O)₂Co(dmgBF₂)₂ under H₂: Application to Radical Cyclizations”, *J. Am. Chem. Soc.* **2012**, *134*, 14662. DOI: 10.1021/ja306037w. Impact Factor: 16.383

4). Liu, Q.; **Li, G.**; Yi, H.; Wu, P.; Liu, J.; Lei, A., “Pd-Catalyzed Direct and Selective C–H Functionalization: C3-Acetoxylation of Indoles”, *Chem. Eur. J.* **2011**, *17*, 2353. DOI: 10.1002/chem.201002547. Impact Factor: 5.020

3). Liu, Q.; **Li, G.**; He, J.; Liu, J.; Li, P.; Lei, A., “Palladium-Catalyzed Aerobic Oxidative Carbonylation of Arylboronate Esters under Mild Conditions”, *Angew. Chem. Int. Ed.* **2010**, *49*, 3371. DOI: 10.1002/anie.201000460. Impact Factor: 16.823

2). Liu, Q.; Lan, Y.; Liu, J.; **Li, G.**; Wu, Y.; Lei, A., “Revealing a Second Transmetalation Step in the Negishi Coupling and Its Competition with Reductive Elimination: Improvement in the Interpretation of the Mechanism of Biaryl Syntheses”, *J. Am. Chem. Soc.* **2009**, *131*, 10201. DOI: 10.1021/ja903277d. Impact Factor: 16.383

1). Liu, Q.; Duan, H.; Luo, X.; Tang, Y.; **Li, G.**; Huang, R.; Lei, A., “An Electron-Deficient Diene as Ligand for Palladium-Catalyzed Cross-Coupling Reactions: An Efficient Alkylation of Aryl Iodides by Primary and Secondary Alkylzinc Reagents”, *Adv. Synth. Catal.* **2008**, *350*, 1349. DOI: 10.1002/adsc.200800118. Impact Factor: 5.981

Presentations and Professional Activities

Invited Research Presentations

(2023) Utah Valley University, Orem, Utah. November 6, 2023. **New Strategy for Radical C(sp³)-H Functionalizations via High-Valent Iron Complexes.**

(2023) Organometallic Chemistry Gordon Research Conference, Newport, Rhode Island. July 9, 2023. **Fe/Co Dual Catalyzed Remote C-C Desaturation.**

(2022) Fall 2022 ACS National Meeting, Chicago, Illinois. August 22, 2022. **C(sp³)-H Functionalizations Catalysed by a Bioinspired Pincer Iron(III) Complex.**

(2021) Bristol Myers Squibb, Princeton, New Jersey. July 28, 2021. **C(sp³)-H Functionalizations via Bioinspired Planar Iron Complexes.**

(2020) Southern Illinois University Edwardsville, Edwardsville, Illinois. November 17, 2020. **Bioinspired Transition-Metal Catalyzed Radical Reactions and their Applications in Medicinal Chemistry.**

(2020) Brigham Young University, Provo, Utah. October 29, 2020. **Bioinspired Transition-Metal Catalyzed Radical Reactions and their Applications in Medicinal Chemistry.**

(2020) Southwest University, Chongqing, China. September 2, 2020. **Bioinspired Transition-Metal Catalyzed Radical Reactions and their Applications in Medicinal Chemistry.**

(2020) Hunan University, Changsha, China. January 8, 2020. **Late-Stage Diversification of Pharmaceuticals by Transition-Metal Catalyzed Radical Reactions.**

(2020) South Central University for Nationalities, Wuhan, China, January 7, 2020. **Late-Stage Diversification of Pharmaceuticals by Transition-Metal Catalyzed Radical Reactions.**

(2020) Wuhan University, Wuhan, China, January 6, 2020. **Late-Stage Diversification of Pharmaceuticals by Transition-Metal Catalyzed Radical Reactions.**

(2019) Chongqing University, Chongqing, China, December 30, 2019. **Late-Stage Diversification of Pharmaceuticals by Transition-Metal Catalyzed Radical Reactions.**

(2019) Boise State University, Boise, Idaho, November 08, 2019. **Late-Stage Diversification of Pharmaceuticals by Transition-Metal Catalyzed Radical Reactions.**