

Mengmeng Zheng

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Education:

- **Postdoctor**, *Computational Chemistry*, Vanderbilt University, Nashville, United States. (Jun. 2025 –) (advisor: Zhongyue Yang).
- **Postdoctor**, *Theoretical Chemistry*, Shanghai Institute of Organic Chemistry, University of Chinese Academy of Sciences, Shanghai, China. & Hangzhou Institute for Advanced Study, University of Chinese Academy of Sciences, Hangzhou, China. (Mar. 2023 – Mar. 2025) (advisor: Xiaosong Xue).
- **Doctor**, *Organic Chemistry*, School of Chemistry, Nankai University, Tianjin, China. (Sep. 2019 – Dec. 2022) (advisor: Jinpei Cheng).
- **Visiting Student**, *Theoretical Chemistry*, School of Chemistry, Aarhus University, Aarhus, Denmark. (Jun. 2017 – Aug. 2017).
- **Master**, *Physical Chemistry*, School of Chemistry, South China Normal University, Guangzhou, China. (Sep. 2014 – Jun. 2017) (advisor: Qianshu Li).
- **Summer School Student**, *Organic Chemistry*, Schulich Faculty of Chemistry, Israel Institute of Technology, Haifa, Israel. (Jul. 2016 – Aug. 2016).

Publications:

1. **Meng-Meng Zheng**[#], Liu Cai[#], Tiancheng Ma, Hao-Dong Tan, Xiaoyu Lai, Jiajia Dong*, Xiao-Song Xue*, Computational analysis of modular diazotransfer reactions for the development of predictive reactivity models and diazotransfer reagents. *Nature Synthesis*, 2024, 3, 1507–1517.
2. **Meng-Meng Zheng**, Xiao-Song Xue, Computationally guided design of a diazotransfer reagent with high reactivity. *Nature Synthesis*, 2024, 3, 1455–1456.
3. **Meng-Meng Zheng**, Hao-Dong Tan, Yueqian Sang, Xiao-Song Xue*, Jin-Pei Cheng, Computational insights into the effects of reagent structure and bases on nucleophilic monofluoromethylation of aldehydes. *Chinese Chemical Letters*, 2022, 33, 2387–2390.
4. **Meng-Meng Zheng**[#], Zizhen Rao[#], Yueqian Sang, Qianzhen Shao, Haoran Xu, Xiao-Song Xue*, Insights into the Halogen Effects on Regioselectivities of Nucleophilic Haloalkylation of α,β -Enones. *Chemistry – An Asian Journal*, 2025, e202500055.
5. Zhiyuan Peng[#], Shoujun Sun[#], **Meng-Meng Zheng**[#], Yangyang Li, Xixi Li, Suhua Li, Xiao-Song Xue*, Jiajia Dong*, Bing Gao*, Enantioselective sulfur(VI) fluoride exchange reaction of iminosulfur oxydifluorides. *Nature Chemistry*, 2024, 16, 353–362. (co-first author)
6. Jia-Yu Li, Ying Liu, Donglei Sun, Gang Wu, Shuai-Shuai Yue, Hui-Yi Yang, Hao Zhang, Wei Zhang*, **Meng-Meng Zheng***, Xiao-Song Xue*, and Shuo Guo*, Radical 1,3-Difunctionalization of β,γ -Unsaturated Ketones via Concomitant 1,2-Carbonyl Migration: An Entrance to β -SF5-/ β -CF3SF4 Ketones. *Journal of the American Chemical Society*, 2025, 147, 26124–26132. (co-author)
7. Bo Wang[#], **Meng-Meng Zheng**[#], Xiaomei Chen, Taige Kong, Qian Wang, Xiao-Song Xue*, Qinghe Liu*, Jinbo Hu*, Stereoselective Nucleophilic Di- and Monofluoro(sulfoximidoyl)Methylation of C=C Bonds: Remote Neighboring Group Participation Enables Facile Access to Chiral γ -Fluorinated Amines. *Angewandte Chemie International*

Edition, 2025, e202511400. (co-first author)

8. Xiu-Qing Cui[#], **Meng-Meng Zheng[#]**, Xiaodong Tang, Zhi-Qi Zhang, Xiao-Song Xue, Ilan Marek*, Jun-An Ma*, Fa-Guang Zhang*, Dirhodium(II)-catalyzed enantioselective cyclopropanation of internal alkynes with trifluoromethyl carbene. *Chem Catalysis*, 2023, 3, 100637. (co-first author)

9. Xing Peng[#], **Meng-Meng Zheng[#]**, Pei Qin, Xiao-Song Xue*, Fa-Guang Zhang*, Jun-An Ma*, Silver-catalysed [3 + 2] annulation reaction of aryldiazonium salts with allenes enabled by boronate direction. *Organic Chemistry Frontiers*, 2023, 10, 74–82. (co-first author)

10. Ming-Yang Xiao[#], **Meng-Meng Zheng[#]**, Xing Peng, Xiao-Song Xue, Fa-Guang Zhang*, and Jun-An Ma*, Catalytic direct construction of cyano-tetrazoles. *Organic Letters*, 2020, 22, 7762–7767. (co-first author)

11. Ting-Yu Fang, Meng-Ye Jiang, **Meng-Meng Zheng**, Jun-An Ma, and Fa-Guang Zhang*, SH2 Decarboxylative Monofluoromethylation of Aliphatic Carboxylic Acids Enabled by Nickel/Photoredox Dual Catalysis. *Angewandte Chemie International Edition*, 2025, 64, e202507632.

12. Zhi-Qi Zhang, **Meng-Meng Zheng**, Xiao-Song Xue, Ilan Marek*, Fa-Guang Zhang*, Jun-An Ma*, Catalytic enantioselective cyclopropanation of internal alkynes: access to difluoromethylated three-membered carbocycles. *Angewandte Chemie International Edition*, 2019, 58, 18191–18196.

13. Hui-Juan Wang, **Meng-Meng Zheng**, Wen-Wen Xing, Yong-Xue Li, Yao-Yao Wang, Hongjie Zhu, Ying-Ming Zhang*, Qilin Yu*, Yu Liu*, Conformationally confined three-armed supramolecular folding for boosting near-infrared biological imaging. *Chemical Science*, 2023, 14, 8401–8407.

14. Yueqian Sang, Biying Zhou, **Meng-Meng Zheng**, Xiao-Song Xue*, Jin-Pei Cheng, DFT modeling of catalytic fluorination reactions: mechanisms, reactivities, and selectivities. **WILEY-VCH GmbH, Boschstr**, 2021, 307–362.

15. Jun-Liang Zeng[#], Yue Zhang[#], **Meng-Meng Zheng**, Zhi-Qi Zhang, Xiao-Song Xue, Fa-Guang Zhang*, Jun-An Ma*, Chemodivergent and stereoselective construction of *gem*-difluoroallylic amines from masked difluorodiazole reagents. *Organic Letters*, 2019, 21, 8244–8249.

Patent

1. Xiao-Song Xue, Liu Cai and **Meng-Meng Zheng**. The preparation methods and applications of a diazotransfer reagent. (Published Patent)

Awards and Skills:

Awards: Provincial-Level Merit Student. Twice Awarded the National Encouragement Scholarship.

Skills: Software (ChemDraw, Gaussian, ADF, Amber, Gromacs, etc.)