张新刚

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姓 名: 张新刚

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简历：

1998年毕业于四川大学应用化学系；2003年获中科院上海有机化学研究所理学博士学位；之后在美国伊利诺伊大学香槟分校（University of Illinois at Urbana-Champaign, UIUC）化学系Wilfred A. van der Donk课题组从事博士后及研究助理，研究领域为化学生物学；2008年5月任上海有机化学研究所创新岗位副研究员，课题组长，研究生导师；2012年1月起任研究员，博士生导师。

研究方向：

金属有机氟化学：以过渡金属催化为手段，研究廉价易得的含氟工业原料和工业废弃物的高效转化，使之具有工业应用前景，建立高效廉价金属催化体系，发展高效温和的氟化新策略、新反应和新方法；

化学生物学相关研究：应用化学生物学手段以及氟原子的独特反应性发展对多肽、蛋白、核酸进行选择性修饰的方法，并进一步应用到化学生物学及相关领域中。

专家类别：研究员

职务：课题组长

获奖及荣誉：

2017年 “万人计划”科技创新领军人才

2016年 科技部中青年科技创新领军人才

2015年 RSC Fluorine Chemistry Prize（英国皇家化学会氟化学奖）

2015年 第五届中国化学会—英国皇家化学会青年化学家奖

2014年 国家“杰出青年科学基金”

2014年 Thieme Chemistry Journal Award 2014

2009年 上海市“青年科技启明星”计划

代表论著：

1.Chang Xu,Wen-Hao Guo,Xu He, Ying-Long Guo, Xue-Ying Zhang, and Xingang Zhang\*, “Difluoromethylation of (Hetero)Aryl Chlorides with Chlorodifluoromethane Catalyzed by Nickel”, Nat. Commun. 2018, Accepted.

2.Xing Gao, Yu-Lan Xiao, and Xingang Zhang\*, “Copper-Catalyzed Highly Stereospecific Trifluoromethylation and Difluoroalkylation of Secondary Propargyl Sulfonates” Angew. Chem. Int. Ed. 2018, DOI: 10.1002/anie.2017114673.

3.Zhang Feng,? Qiao-Qiao Min,? Xia-Ping Fu,? Lun An, and Xingang Zhang,\* “Chlorodifluoromethane-Triggered Formation of Difluoromethylated Arenes Catalysed by Palladium”, Nature Chemistry, 2017, 9, 918 (This paper was highlighted by Chemical & Engineering News 2017, 95, 7; ACS Molecule of the week June 19, 2017; Synfacts 2017, 13, 1126).

4.Ji-Wei Gu, Qiao-Qiao Min, Ling-Chao Yu, and Xingang Zhang,\* “Tandem Difluoroalkylation-Arylation of Enamides Catalyzed by Nickel” Angew. Chem. Int. Ed. 2016, 55, 12270-12274.

5.Wen-Hao Guo, Qiao-Qiao Min, Ji-Wei Gu, and Xingang Zhang,\* “Rhodium-Catalyzed ortho-Selective C-F Bond Borylation of Polyfluoroarenes with Bpin-Bpin” Angew. Chem.Int. Ed. 2015, 54, 9075.

6.Yu-Lan Xiao, Wen-Hao Guo, Guo-Zhen He, Qiang Pan, and Xingang Zhang,\* “Nickel-Catalyzed Cross-Coupling of Functionalized Difluoromethyl Bromides and Chlorides with Aryl Boronic Acids: A General Method for Difluoroalkylated Arenes” Angew. Chem. Int. Ed. 2014, 53, 9909 (This paper was highlighted by Chemical & Engineering News 2014, 92, 25).

7.Zhang Feng, Qiao-Qiao Min, Yu-Lan Xiao, Bo Zhang, and Xingang Zhang,\* “Pd-Catalyzed Difluoroalkylation of Arylboronic Acids: A New Method for Aryldifluoromethylated Phosphonates and Carboxylic Acid Derivatives” Angew. Chem., Int. Ed. 2014, 53, 1669 (This paper was highlighted by Chemical & Engineering News 2014, 92, 25)

8.Qiao-Qiao Min, Zengsheng Yin, Zhang Feng, Wen-Hao Guo, and Xingang Zhang,\* “Highly Selective gem-Difluoroallylation of Organoborons with Bromodifluoromethylated Alkenes Catalyzed by Palladium” J. Am. Chem. Soc. 2014, 136, 1230.

9.Xingang Zhang\*, Shilu Fan, Chun-Yang He, Xiaolong Wan, Qiao-Qiao Min, Jie Yang and Zhong-Xing Jiang, “Pd(OAc)2 Catalyzed Olefination of Highly Electron-deficient Perfluoroarenes” J. Am. Chem. Soc. 2010, 132, 4506. (This paper was highlighted in Synfacts, 2010, 6, 0652)

10.Chun-Yang He, Shilu Fan, and Xingang Zhang,\* “Pd-Catalyzed Oxidative Cross-Coupling of Perfluoroarenes with Aromatic Heterocycles” J. Am. Chem. Soc. 2010, 132, 12850.

Zhang Xingang

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Resume:

He graduated in 1998 from the Department of Applied Chemistry of Sichuan University. In 2003, he obtained a Ph.D. in Science from the Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences. Subsequently, he worked as a postdoctoral researcher and research assistant in the Wilfred A. van der Donk research group at the Department of Chemistry of University of Illinois at Urbana-Champaign (UIUC), focusing on chemical biology. In May 2008, he became an Associate Researcher at the Shanghai Institute of Organic Chemistry, leading a research group and supervising graduate students. Since January 2012, he has been a Researcher and Doctoral Supervisor.

Research Directions:

Organometallic Fluorine Chemistry: Utilizing transition metal catalysis to study the efficient conversion of inexpensive and readily available fluorinated industrial raw materials and industrial waste into products with industrial application potential. Establishing efficient and cost-effective metal catalytic systems, developing new strategies, reactions, and methods for efficient and mild fluorination.

Chemical Biology: Applying chemical biology techniques and the unique reactivity of fluorine atoms to develop methods for selective modification of peptides, proteins, and nucleic acids, with further applications in chemical biology and related fields.

Expert Category:

Researcher

Position:

Group Leader

Awards and Honors:

In 2017: Leading Talents in Science and Technology Innovation (Ten Thousand Talents Program)

In 2016: Young and Middle-aged Leading Talents in Science and Technology Innovation of the Ministry of Science and Technology

In 2015: RSC Fluorine Chemistry Prize

In 2015: 5th Chinese Chemical Society - Royal Society of Chemistry Young Chemist Award

In 2014: National Science Fund for Distinguished Young Scholars

In 2014: Thieme Chemistry Journal Award 2014

In 2009: Shanghai Rising-Star Program of Youth Scientific and Technological Talents

Representative Publications:

1. Chang Xu,Wen-Hao Guo,Xu He, Ying-Long Guo, Xue-Ying Zhang, and Xingang Zhang\*, “Difluoromethylation of (Hetero)Aryl Chlorides with Chlorodifluoromethane Catalyzed by Nickel”, Nat. Commun. 2018, Accepted.

2. Xing Gao, Yu-Lan Xiao, and Xingang Zhang\*, “Copper-Catalyzed Highly Stereospecific Trifluoromethylation and Difluoroalkylation of Secondary Propargyl Sulfonates” Angew. Chem. Int. Ed. 2018, DOI: 10.1002/anie.2017114673.

3. Zhang Feng,? Qiao-Qiao Min,? Xia-Ping Fu,? Lun An, and Xingang Zhang,\* “Chlorodifluoromethane-Triggered Formation of Difluoromethylated Arenes Catalysed by Palladium”, Nature Chemistry, 2017, 9, 918 (This paper was highlighted by Chemical & Engineering News 2017, 95, 7; ACS Molecule of the week June 19, 2017; Synfacts 2017, 13, 1126).

4. Ji-Wei Gu, Qiao-Qiao Min, Ling-Chao Yu, and Xingang Zhang,\* “Tandem Difluoroalkylation-Arylation of Enamides Catalyzed by Nickel” Angew. Chem. Int. Ed. 2016, 55, 12270-12274.

5. Wen-Hao Guo, Qiao-Qiao Min, Ji-Wei Gu, and Xingang Zhang,\* “Rhodium-Catalyzed ortho-Selective C-F Bond Borylation of Polyfluoroarenes with Bpin-Bpin” Angew. Chem.Int. Ed. 2015, 54, 9075.

6. Yu-Lan Xiao, Wen-Hao Guo, Guo-Zhen He, Qiang Pan, and Xingang Zhang,\* “Nickel-Catalyzed Cross-Coupling of Functionalized Difluoromethyl Bromides and Chlorides with Aryl Boronic Acids: A General Method for Difluoroalkylated Arenes” Angew. Chem. Int. Ed. 2014, 53, 9909 (This paper was highlighted by Chemical & Engineering News 2014, 92, 25).

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8. Qiao-Qiao Min, Zengsheng Yin, Zhang Feng, Wen-Hao Guo, and Xingang Zhang,\* “Highly Selective gem-Difluoroallylation of Organoborons with Bromodifluoromethylated Alkenes Catalyzed by Palladium” J. Am. Chem. Soc. 2014, 136, 1230.

9. Xingang Zhang\*, Shilu Fan, Chun-Yang He, Xiaolong Wan, Qiao-Qiao Min, Jie Yang and Zhong-Xing Jiang, “Pd(OAc)2 Catalyzed Olefination of Highly Electron-deficient Perfluoroarenes” J. Am. Chem. Soc. 2010, 132, 4506. (This paper was highlighted in Synfacts, 2010, 6, 0652)

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