

## Steve Zhou

Nanyang Assistant Professor  
National Research Foundation Research Fellow

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### Research Interests

My research programs will be focused to devise efficient and practical ways to access important chiral building blocks from cheap, readily available feedstock chemicals. The importance of this quest is underscored by over \$ 200 billion sales of chiral drugs, projected for 2008. Despite tremendous advances in asymmetric catalysis, preparation of several key building blocks still needs much improvement. My research programs will specifically target these classes of compounds, e.g., epoxides, alkyl amines, alkyl alcohols, carbocycles, and heterocycles. I am also interested in the synthesis of fluorinated arenes and heteroarenes, due to their frequent occurrence in both pharmaceuticals and agrochemicals. To achieve these goals, my group will be engaged in the design and synthesis of both transition metal and organic catalysts, method development and mechanistic investigations.

My other interests include: general-purpose, organic platforms for both structural and functional modeling of metalloenzyme active sites; new designs of organic polymers and oligomers for solar energy harvesting and conversion.

### Positions Available

I seek self-motivated, career-oriented graduates, research assistants and post-doc coworkers. Post-doc candidates with strong background in organic or organometallic synthesis are encouraged to apply to me directly with a CV.

I am also committed to graduate and undergraduate research programs.

### Selected Publications

1. Zhou, J.; Hartwig, J. F. Intermolecular, Catalytic Asymmetric Hydroamination of Bicyclic Alkenes and Dienes in High Yield and Enantioselectivity. *J. Am. Chem. Soc.* **2008**, *130*, 12220-12221.
2. Zhou, J.; Hartwig, J. F. Iridium-Catalyzed H/D Exchange at Vinyl Groups without Olefin Isomerization. *Angew. Chem. Int. Ed.* **2008**, *47*, 5783-5787.
3. Zhou, J.; Fu, G. C. Suzuki Cross-Couplings of Unactivated Secondary Alkyl Halides. *J. Am. Chem. Soc.* **2004**, *126*, 1340-1341. *Top-10 most requested chemistry paper in 2004 by CAS.*
4. Zhou, J.; Fu, G. C. Cross-Couplings of Unactivated Secondary Alkyl Halides: Room-Temperature Nickel-Catalyzed Negishi Reactions of Alkyl Bromides and Iodides. *J. Am. Chem. Soc.* **2003**, *125*, 14726-14727. *Top-10 most requested chemistry paper in 2003 by CAS.*
5. Zhou, J.; Fu, G. C. Palladium-Catalyzed Negishi Cross-Coupling Reactions of Unactivated Alkyl Iodides, Bromides, Chlorides, and Tosylates. *J. Am. Chem. Soc.* **2003**, *125*, 12527-12530. *Top-10 most requested chemistry paper in 2003 by CAS.*

Dr. Steve Zhou recently started his group at the Nanyang Technological University in Singapore in 2008. He holds a joint appointment as National Research Foundation research fellow and Nanyang assistant professor, with a total funding of over S\$2.7 million (1S\$=4.5RMB) over three years. He obtained his Ph.D degree at MIT under the guidance of Prof. Gregory Fu. Later, He received his post-doc trainings in Prof. John Hartwig's group, at Yale and later at UIUC. His main interests include asymmetric catalysis, organometallic chemistry and mechanistic studies. His research programs focus on important transformations from simple starting material to useful building blocks for organic synthesis. To facilitate these reactions, both transition-metal complexes and small organic molecules will be developed as catalysts. His other interests include polymer-based solar cells and biomimetic chemistry.

He seeks outstanding, self-motivated post-doc coworkers. Their basic monthly salaries are negotiable from S\$3800 to S\$6000, depending on their qualification and performance. Post-doc candidates with a strong background in organic or organometallic chemistry are encouraged to email him directly with a CV.

For Ph.D candidates, their basic monthly salary is S\$2000 per month. For applications, please follow the online instruction closely to submit application packages. Except: (a) for applicants that do **not** have TOFEL or GRE scores, the chemistry division organizes its own English tests twice a year in China; (b) for applications to Dr. Zhou's group, official deadlines and enrolment dates do not apply. Applicants should contact Dr. Zhou to expedite their applications, **one week after** they mail their application packages to the Graduate Studies Office of the university.

<http://www.spms.ntu.edu.sg/cbc/Graduates/GradProgramOverview.html#What7>

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