

Monday, October 22, 2018

Personal

Born on 23 October, 1980 in *Mengcheng, Anhui, P. R. China*

Employment

2015-present **National University of Singapore** Assistant Professor of Chemistry
2011-2014 **University of California, Berkeley** Postdoctoral Research Associate
2010-2011 **University of Illinois at Urbana-Champaign** Postdoctoral Research Associate

Education

- 2010-2014 **University of California, Berkeley; University of Illinois at Urbana-Champaign**
Postdoctoral Advisor: Prof. John F. Hartwig
Studied palladium- and nickel-catalyzed C-C and C-N cross-coupling reactions. Such reactions include (asymmetric) α -arylation of carbonyl compounds, amination of aryl halides with primary aliphatic amines, and (asymmetric) α -arylation of fluorinated enolates. Detailed mechanistic studies were conducted for nickel-catalyzed C-C and C-N cross-coupling reactions.
- 2005-2009 **University of Groningen, Netherlands**, Ph.D. in Chemistry
Graduate Supervisor: Prof. Bart Hessen
Designed and synthesized a range of multiple-dentated nitrogen-based ligands derived from the 6-amino-1,4-diazepine framework. Synthesized a variety of rare-earth metal alkyl complexes supported by these nitrogen-based ligands. Studied the catalytic activities of these complexes towards hydrofunctionalization of olefins and polymerization of ethylene.
- 2002-2005 **Åbo Akademi University, Finland**, M.Sc. in Chemical Engineering
Thesis Supervisor: Dr. Ove S. Andell
Designed and synthesized multiple siloxy-substituted cyclopentadienyl ligands and zirconium complexes supported by these Cp-ligands. Studied the copolymerization of ethylene and 1-hexene catalyzed these synthesized zirconocenes.
- 1998-2002 **University of Science and Technology of China, Hefei, Anhui**, B.Sc. in Applied Chemistry
Thesis Supervisor: Prof. Wenfang Shi
Studied the synthesis of hyper-branched polyamides.

Awards

- 2019 CJS Lectureship Award (CJS: The Chemical Society of Japan)
2018 Thieme Chemistry Journal Award
2017 Young Chemist Award (NUS Chemistry Department)
2017 Asian Core Program Lectureship from Japan and Taiwan
2016 Asian Core Program Lectureship from China
2015 Young Investigator Award (National University of Singapore)
2008 Chinese Government Awards for Self-Financed Graduate Students Abroad

Teaching

- 2018 CM4225 "Organic Spectroscopy" (73 students)
2018 CM5225 "Asymmetric Catalysis" (16 students)
2017 CM4225 "Organic Spectroscopy" (75 students)
2017 CM5225 "Asymmetric Catalysis" (25 students)
2016 CM4225 "Organic Spectroscopy" (25 students)
2015 CM3221 "Organic Synthesis and Spectroscopy" (70 students)

Publications at National University of Singapore (NUS)

13. Yu, S.; Sang, H. L.; Zhang, S.-Q.; Hong, X.*; Ge, S.* "Cobalt-Catalyzed (*E*)-Selective anti-Markovnikov Hydrosilylation of Terminal Alkynes" *Communs. Chem.* **2018**, *1*, 65.
12. Wang, C.; Ge, S.* "Versatile Cobalt-Catalyzed Enantioselective Entry to Boryl-Functionalized All-Carbon Quaternary Stereogenic Centers" *J. Am. Chem. Soc.* **2018**, *140*, 10687–10690.
11. Teo, W. J.; Ge, S.* "Cobalt-Catalyzed Enantioselective Synthesis of Chiral *gem*-Bisborylalkanes" *Angew. Chem., Int. Ed.* **2018** *57*, DOI: 10.1002/anie.201805705, Published online on August 16, 2018.
10. Wu, C.; Teo, W. J.; Ge, S.* "Cobalt-Catalyzed (*E*)-Selective anti-Markovnikov Hydrosilylation of Terminal Alkynes" *ACS Catal.* **2018**, *8*, 5896–5900.
9. Sang, H. L.; Yu, S.; Ge, S.* "Copper-Catalyzed Asymmetric Hydroboration of 1,3-Enynes with Pinacolborane to Access Chiral Allenylboronates" *Org. Chem. Front.* **2018**, *5*, 1284–1287.
8. Teo, W. J.; Ge, S.* "Cobalt-Catalyzed Diborylation of 1,1-Disubstituted Vinylarenes: A Practical Access to Branched *gem*-Bis(boryl)alkanes" *Angew. Chem., Int. Ed.* **2018**, *57*, 1654–1658.
7. Sang, H. L.; Yu, S.; Ge, S.* "Cobalt-Catalyzed Stereoconvergent Markovnikov Hydrosilylation of Conjugated Dienes" *Chem. Sci.* **2018**, *9*, 973–978.
6. Wang, C.; Teo, W. J.; Ge, S.* "Access to (*Z*)-Allylsilanes and (*Z*)-Allylic Alcohols Via Cobalt-Catalyzed Regioselective Hydrosilylation of Allenes" *Nat. Commun.* **2017**, *8*, 2258 (DOI:10.1038/s41467-017-02382-7).
5. Yu, S.; Sang, H. L.; Ge, S.* "Enantioselective Copper-Catalyzed Alkylation of Quinoline *N*-Oxides with Vinylarenes" *Angew. Chem., Int. Ed.* **2017**, *56*, 15896–15900.
4. Yu, S.; Wu, C.; Ge, S.* "Cobalt-Catalyzed Asymmetric Hydroboration/Cyclization of 1,6-Enynes with Pinacolborane" *J. Am. Chem. Soc.* **2017**, *139*, 6526–6529.
3. Teo, W. J.; Wang, C.; Tan, Y. W.; Ge, S.* "Cobalt-Catalyzed *Z*-Selective Hydrosilylation of Terminal Alkynes" *Angew. Chem., Int. Ed.* **2017**, *56*, 4328–4332.
2. Wang, C.; Teo, W. J.; Ge, S.* "Cobalt-Catalyzed Regiodivergent Hydrosilylation of Vinylarenes and Aliphatic Alkenes: Ligand- and Silane-Dependent Regioselectivities" *ACS Catal.* **2017**, *7*, 855–863.
1. Wang, C.; Wu, C.; Ge, S.* "Iron-Catalyzed *E*-Selective Dehydrogenative Borylation of Vinylarenes with Pinacolborane" *ACS Catal.* **2016**, *6*, 7585–7589.

Publications (Postdoc and Graduate Study)

15. Jin, Y.; Chen, M.; Ge, S.; Hartwig, J. F. "Pd-Catalyzed Enantioselective α -Arylation of α -Fluorooxindoles" *Org. Lett.* **2017**, *19*, 1390–1393.
14. Jiao, Z.; Beiger, J. J.; Jin, Y.; Ge, S.; Zhou, J.; Hartwig, J. F. "Pd-Catalyzed Enantioselective α -Arylation of α -Fluoroketones" *J. Am. Chem. Soc.* **2016**, *138*, 7585–7589.
13. Ge, S.; Arlow, S. I.; Mormino, M. G.; Hartwig, J. F. "Pd-Catalyzed α -Arylation of Trimethylsilyl Enolates of α,α -Difluoroacetamides" *J. Am. Chem. Soc.* **2014**, *136*, 14401–14404.
12. Ge, S.; Chaladaj, W.; Hartwig, J. F. "Pd-Catalyzed α -Arylation of α,α -Difluoroketones with Aryl Bromides and Chlorides. A Route to Difluoromethylarenes" *J. Am. Chem. Soc.* **2014**, *136*, 4149–4152.

11. Ge, S.; Green, R. A.; Hartwig, J. F. "Controlling First-Row Metal Catalysts: Amination of Aryl and Heteroaryl Chlorides and Bromides with Primary Aliphatic Amines Catalyzed by a BINAP-Ligated Single-Component Ni(0) Complex" *J. Am. Chem. Soc.* **2014**, *136*, 1617–1627.
10. Hama, T.; Ge, S.; Hartwig, J. F. "Palladium-Catalyzed α -Arylation of Zinc Enolates of Esters: Improved Reaction Conditions and the Substrate Scope" (Featured Article) *J. Org. Chem.* **2013**, *78*, 8250–8266.
9. Ge, S.; Hartwig, J. F. "A Highly Reactive Single-Component Nickel Precursor for Suzuki-Miyaura Cross-Coupling of Heteroaryl Halides with Heteroarylboronic Acids" *Angew. Chem., Int. Ed.* **2012**, *51*, 12837–12841. **Highlighted by Synfacts (2013, 9, 0143).**
8. Ge, S.; Hartwig, J. F. "Nickel-Catalyzed Asymmetric α -Arylation and Heteroarylation of Ketones with Chloroarenes: Effect of Halide on Selectivity, Oxidation State, and Room-Temperature Reactions" *J. Am. Chem. Soc.* **2011**, *133*, 16330–16333. **Highlighted by Synfacts (2012, 8, 0055).**
7. Ge, S.; Meetsma, M.; Hessen, B. "Scandium, Yttrium and Lanthanum Benzyl and Alkynyl Complexes with the *N*-(2-Pyrrolidin-1-ylethyl)-1,4-diazepan-6-amido Ligand: Synthesis, Characterization, and *Z*-Selective Catalytic Linear Dimerization of Phenylacetylenes" *Organometallics* **2009**, *28*, 719–726.
6. Ge, S.; Meetsma, M.; Hessen, B. "Neutral and Cationic Rare Earth Metal Alkyl and Benzyl Compounds with the 6-Pyrrolidinyl-1,4,6-trimethyl-1,4-diazepine Ligand and their Performance in the Catalytic Hydroamination/cyclization of Aminoalkenes" *Organometallics* **2008**, *27*, 5339–5346.
5. Ge, S.; Meetsma, M.; Hessen, B. "Highly Efficient Hydrosilylation of Alkenes by Organoyttrium Catalysts with Sterically Demanding Amidinate and Guanidinate Ligands" *Organometallics* **2008**, *27*, 3131–3135.
4. Ge, S.; Morambeuna, V. F. Q.; Meetsma, M.; Hessen, B. "Highly Efficient Regio- and Stereoselective Dimerization of (hetero)Aromatic Terminal Alkynes by Organo-rare Earth Metal Catalysts" *Organometallics* **2007**, *26*, 6508–6510.
3. Ge, S.; Meetsma, M.; Hessen, B. "Monoanionic *fac*- κ^3 ligands derived from 6-amino-1,4-diazepine: ligand dependence of stability and catalytic activity of their scandium alkyl derivatives" *Organometallics* **2007**, *26*, 5278–5284.
2. Ge, S.; Bambirra, S.; Meetsma, M.; Hessen, B. "The 6-amino-6-methyl-1,4-diazepine group as an ancillary ligand framework for neutral and cationic scandium and yttrium alkyls" *Chem. Commun.* (Cambridge, United Kingdom) **2006**, 3320–3322.
1. Ge, S.; Andell, O. S.; Penninkangas, A.; Maaranen, J.; Telen, T.; Mutikainen, I. "The first synthesised examples of di-siloxy-substituted cyclopentadienyl zirconocenes, their synthesis, structure and activity in ethylene polymerization" *J. of Organomet. Chem.* **2006**, *691*, 122–130.

Patent Applications

1. Hartwig, J. F.; Ge, S.; Chaladaj, W. "Metal-Catalyzed Coupling of Aryl and Vinyl Halides with α,α -Difluorocarbonyl Compounds" PCT Int. Appl. (**2014**), WO201465861 A1 20141009
2. Andel, O. A.; Penninkangas, A.; Ge, S.; Paavola S. "Siloxy substituted metallocene catalysts" Eur. Pat. Appt. (**2007**), 34pp. EP 1752462 A1 20070214
3. Andel, O. A.; Penninkangas, A.; Ge, S. "Transition-metal metallocenes with mono- or bicyclic multi-siloxy-substituted cyclopentadienyl groups, their preparation and use as polymerization catalysts" Eur. Pat. Appt. (**2006**), 20pp. EP 1640378 A1 20060329

Invited Lectures

12.

11. The 13th International Conference on Cutting-Edge Organic Chemistry in Asia (ICCEOCA-13), November 1–4, 2018, Bangkok, Thailand

10. Asian Core Program Lectures to China (Sichuan University, Chongqing University, Southwest University and Yunnan University), September 24-29, 2018, Chengdu (Sichuan), Chongqing, Kunming (Yunnan), China

09. Stratingh Institute of Chemistry, University of Groningen, June 6, 2018, Groningen, the Netherlands

08. The Symposium of JSPS-DFG Joint Graduate Externship Program, March 13-16, 2018, Osaka University, Osaka, Japan

07. The 2nd Base Metal Catalysis Symposium, Kyushu University, January 24–26, 2018, Fukuoka, Japan

06. The 8th International Collaborative and Cooperative Chemistry Symposium, December 18–19, 2017, Hyderabad, India

05. The 13th SINO-US Chemistry Professor Conference, December 15–18, 2017, Nantong, China

04. The 7th International Collaborative and Cooperative Chemistry Symposium, December 15–18, 2016, Beijing, China

03. The 14th International Symposium for Chinese Organic Chemists (ISCOC) & The 11th International Symposium for Chinese Inorganic Chemists (ISCIC), December 8–10, 2016, Singapore

02. International Symposium on Catalysis and Fine Chemicals, November 10–14, 2016, Taipei, Taiwan

01. The 12th SINO–US Chemistry Professors Conference, June 23–35, 2016, Guangzhou, China