Prof. Aiwen Lei
College of Chemistry and Molecular Sciences
Wuhan University, Wuhan, 430072 (P. R. China)
Fax: (+86)27-6875-4672
E-mail: aiwenlei@whu.edu.cn

Prof. Aiwen Lei

Editorial Board Member of ***Chemistry – An Asian Journal***
International Advisory Board Member of ***ChemSusChem***
Editorial Board Member of ***Chinese Chemical Letters***
Editorial Advisory Board Member of ***Current Organocatalysis***
Editorial Advisory Board Member of ***Chemical Reviews***

Education

- Ph. D., Organic Chemistry, July, 2000, Shanghai Institute of Organic Chemistry, Chinese Academy of Science (CAS), China, Supervisor - Prof. Xiyan Lu
- B.S., Chemistry Education, July, 1995, Huaibei Normal University, Huaibei, Anhui Province, P. R. China

Research Interest

- Developing highly selective and efficient transition-metal-catalyzed C-C, and C-heteroatom bond formation in syntheses, e.g. oxidative coupling reactions, C-H bond functionalization
- Small molecule (such as CO, O_2, N_2O, H_2O_2, NH_3, ClO_2^-, etc.) activation with an emphasis on applying such molecules in efficient synthetic methods
- Mechanistic studies including kinetic and active intermediate studies

Research Experience

- 2014.10- now Vice director of the Institute for Advanced Studies (IAS),Wuhan University
- 2005.3- now Professor of Wuhan University
- 2003.8-2005.3, Research Associate, Department of Chemistry, Stanford University, US, with Professor James, P. Collman
- 2000.8-2003.8 Postdoctoral Fellow, Department of Chemistry, the Pennsylvania State University, US, with Professor Xumu Zhang
- 1995.9-2000.7 Graduate Studies, Shanghai Institute of Organic Chemistry, CAS, China (SIOC), with Professor Xiyan Lu

Selected Awards

- Overseas Chinese (Innovative Talents) Contribution Award, 2016
- The National Youth Science and Technology Innovation Talents, 2015
- The Roche Chinese Young Investigator Award, 2015
- Fellow of the Royal Society of Chemistry, FRSC, 2015
- Yangtse River Scholar Distinguished Professor, 2014
- Second-Class Natural Science Award of Liaoning Province, 2014
- Overseas Chinese (Innovative Talents) Contribution Award, 2014

- Youth Chemist Award of the Chinese Chemical Society — Physical Organic Chemistry, 2014
- Committee of the Chinese Physical Organic Chemical Society, 2014
- Chinese Chemistry Society—Royal Society of Chemistry Young Chemist Award, 2014
- Guest Professor, University of Münster, 2013
- Asian Rising Stars (15th ACC Meeting), 2013
- Hubei Province Youth Medal, 2013
- NanKai University Lectureship on Organic Chemistry,2013
- First-Class Natural Science Award of Hubei Province, 2012
- Eli Lilly Scientific Excellence Award in Chemistry, 2011
- Lectureship Award under the New Phase Asian Core Program on Cutting-Edge Organic Chemistry in Asia, Singapore, 2011
- Lectureship Awardee of Asian International Symposium for Outstanding Young Scientists，2011
- Lectureship Award under the New Phase Asian Core Program on Cutting-Edge Organic Chemistry in Asia, Japan, 2011
- National Science Fund for Distinguished Young Scholars, China, 2010
- CAPA (Chinese-American Chemistry & Chemical Biology Professors Association) Distinguished Faculty Award, 2009
- Chinese Chemistry Society—John Wiley Young Chemist Award, 2008
- Royal Society Chemistry Journal Grant, 2008
- Synthesis & Synlett Journal Award, 2008
- Wuxi Pharmtech Biological & Organic Creative Award, 2007
- Luojia Scholarship Professor (Wuhan University), 2007
- Outstanding Young Scientist of Hubei Province, 2006

Publications during independent research

2018

1) Tang, Shan; Liu, Yichang; Gao, Xinlong; Wang, Pan; Huang, Pengfei; Lei, Aiwen. Multimetallic-Catalyzed Oxidative Radical Alkynylation with Termianl Alkynes: A New Strategy for C(sp3)-C(sp) Bond Formation. *J. Am. Chem. Soc.* **2018, DOI:** 10.1021/jacs.8b02745
2) Zhang, Dongchao; Huang, Zhiliang; Lei, Aiwen. Oxidation-induced ortho-selective C-H bond functionalization of 2-naphthylamine derivative. *Science China: Chemistry* **2018, DOI:** 10.1007/s11426-018-9218-5
3) Tang, Shan; Wang, Siyuan; Liu, Yichang; Cong, Hengjiang; Lei, Aiwen. Electrochemical Oxidative C-H Amination of Phenols: Access to Triarylamine Derivatives. *Angew. Chem. Int. Ed.* **2018, DOI:** 10.1002/anie.201800240
4) Gao, Xinlong; Wang, Pan; Zeng, Li; Tang, Shan; Lei, Aiwen. Cobalt(II)-Catalyzed Electrooxidative C-H Amination of Arenes with Alkylamines. *J. Am. Chem. Soc.* **2018,** *140,* 4195-4199
5) Liu, Kun; Song, Chunlan; Lei, Aiwen, Recent advances in iodine mediated electrochemical oxidative cross-coupling. *Org. Biomol. Chem.* **2018, DOI:** 10.1039/c8ob00063h
6) Shao, Ailong; Zhan, Jirui; Li, Na; Chiang, Chien-Wei; Lei, Aiwen. External Oxidant-Free Dehydrogenative Lactonization of 2-Arylbenzoic Acids via Visible-Light Photocatalysis. *J. Org. Chem.* **2018, DOI:** 10.1021/acs.joc.7b03195
7) Tang, Shan; Wang, Siyuan; Liu, Yichang; Cong, Hengjiang; Lei, Aiwen. Electrochemical oxidative C-H Amination of Phenols: Access to Triarylamine Derivatives. *Angew. Chem. Int. Ed.* **2018, DOI:** 10.1002/anie.201800240
8) Tang, Shan; Wang, Dan; Liu, Yichang; Zeng, Li; Lei, Aiwen. Cobalt-catalyzed electrooxidative C-H/N-H [4+2] annulation with ethylene or ethyne. *Nature. Commun.* **2018,** *9,* 789
9) Hu, Xia; Zhang, Guoting; Bu, Faxiang; Luo, Xu; Yi, Kebing; Zhang, Heng; Lei, Aiwen. Photoinduced oxidative activation of electron-rich arenes: alkenylation with H2 evolution under external oxidant-free conditions. *Chem. Sci.* **2018,** *9,* 1521-1526
10) Niu, Linbin; Wang, Shengchun; Liu, Jiamei; Yi, Hong; Liang, Xing-An; Liu, Tianyi; Lei, Aiwen. Visible light-mediated oxidative C(sp3)-H phosphonylation for α-aminophosphonates under oxidant-free conditions. *Chem. Commun.* **2018,** *54,* 1659-1662
11) Huang, Zhiliang; Zhang, Dongchao; Lee, Jyh-Fu; Lei, Aiwen. Elucidating the structure of a high-spin σ-phenyliron(III) species in a live FeCl3-PhZnCl reaction system. *Chem. Commun.* **2018,** *54,* 1481-1484

12) Wu, Yong; Yi, Hong; Lei, Aiwen. Electrochemical Acceptorless Dehydrogenation of N-Heterocycles Utilizing TEMPO as Organo-Electrocatalyst. *ACS Catal.* **2018,** *8,* 1192-1196
13) Hu, Xia; Zhang, Guoting; Bu, Faxiang; Lei, Aiwen. Selective Oxidative [4+2] Imine/Alkene Annulation with H2 Liberation Induced by Photo-Oxidation. *Angew. Chem. Int. Ed.* **2018,** *57,* 1286-1290
14) Tian, Jun; Yang, Dali; Wen, Jianguo; Filatov, Alexander S.; Liu, Yuzi; Lei, Aiwen; Lin, Xiao-Min. A stable rhodium single-site catalyst encapsulated within dendritic mesoporous nanochannels. *Nanoscale.* **2018,** *10,* 1047-1055
15) Tang, Shan; Liu, Yichang; Lei, Aiwen. Electrochemical Oxidative Cross-coupling with Hydrogen Evolution: A Green and Sustainable Way for Bond Formation. *Chem.* **2018,** *4,* 27-45
16) Kirschner, Matthew S.; Ding, Wendu; Li, Yuxiu; Chapman, Craig T.; Lei, Aiwen; Lin, Xiao-Min; Chen, Lin X.; Schatz, George C.; Schaller, Richard D. Phonon-Driven Oscillatory Plasmonic Excitonic Nanomaterials. *Nano. Lett.* **2018,** *18,* 442-448
17) Song, Chunlan; Dong, Xin; Yi, Hong; Chiang, Chien-Wei; Lei, Aiwen. DDQ-Catalyzed Direct C(sp3)-H Amination of Alkylheteroarenes: Synthesis of Biheteroarenes under Aerobic and Metal-Free Conditions. *ACS Catal.* **2018,** *8,* 2195-2199
18) Pei, Xianglin; Deng, Yi; Duan, Bo; Chan, Ting-Shan; Lee, Jyh-Fu; Lei, Aiwen; Zhang, Lina. Ultra-small Pd cluster supported by chitin nanowires as highly efficient catalysts. *Nano Research* **2018, DOI:** 10.1007/s12274-018-1977-0
19) Wang, Shengchun; Liu, Jiamei; Niu, Linbin; Yi, Hong; Chiang, Chien-Wei; Lei, Aiwen. Oxidation induced C(sp3)-O cleavage via visible-light photoredox catalysis. J. Photochemistry and Photobiology, A: Chemistry **2018,** *355,* 120-124
20) Zhang Guoting; Lin, Yulin; Luo, Xu; Hu, Xia; Chen, Cong; Lei, Aiwen. Oxidative [4+2] annulation of styrenes with alkynes under external-oxidant-free conditons. *Nature. Commun.* **2018,** *9,* 1225

2017

21) Shao, Ailong; Luo, Xu; Chiang, Chien-Wei; Gao, Meng; Lei, Aiwen. Furans Accessed through Visible-Light-Mediated Oxidative [3+2] Cycloaddition of Enols and Alkynes. *Chem. Eur. J.* **2017,** *23,* 17874-17878
22) Yi, H.; Hu, X.; Bian, C. L.; Lei, A. W.; Selective Oxidative Esterification from Two Different Alcohols via Photoredox Catalysis, *ChemSusChem* **2017**, 10, 79 – 82
23) Wang, H. M.; Lu, Q. Q.; Chiang, C. W.; Luo, Y.; Zhou, J. F.; Wang, G. Y.; and Lei, A. W.; Markovnikov-Selective Radical Addition of S-Nucleophiles to Terminal Alkynes via Photoredox Process, *Angew. Chem. Int. Ed.* **2017**, 129, 610-614

24) Shao, A. L.; Gao, M.; Chen, S. T.; Wang, T.; Lei, A. W.; CO/O2 assisted oxidative carbon–carbon and carbon–heteroatom bond cleavage for the synthesis of oxosulfonates from DMSO and olefins, *Chem. Sci.*, **2017**, 8, 2175-2178.
25) Niu, H. Y.; Lu, L.J.; Shi, R.Y.; Chiang, C.W.; Lei, A. W.; Catalyst-free N-Methylation of Amines Using CO2, *Chem. Commun.*, **2017**, 53, 1148 - 1151
26) Yi, H.; Niu, L. B.; Song, C. L.; Li, Y. Y.; Dou, B. W.; Singh, A. K.; Lei, A. W.; Photocatalytic Dehydrogenative Cross-Coupling of Alkenes with Alcohols or Azoles without External Oxidant, *Angew. Chem. Int. Ed.* **2017**, 56, 1120 –1124.
27) Yi, H.; Niu, L. B.; Wang, S. C.; Liu, T. Y.; Singh, A. K.; Lei, A. W.; Visible-Light-Induced Acetalization of Aldehydes with Alcohols, *Org. Lett.,* **2017**, 19, 122–125.
28) Wu, Y.; Fu, W.C.; Chiang, C.W.; Choy, P. Y.; Kwong, F. Y.; Lei, A. W.; Palladium-Catalyzed Mono-α-Alkenylation of Ketones with Alkenyl Tosylates, *Chem. Commun.*, **2017**, 53, 952 – 955
29) Shi, R. Y.; Niu, H. Y.; Lu, L. J.; Lei, A. W.; Pd/Cu-Catalyzed Aerobic Oxidative Aromatic C-H Bond Activation/N-Dealkylative Carbonylation towards the Synthesis of Phenanthridinones, *Chem. Commun.*, **2017**, 53, 1908–1911.
30) Pei, P. K.; Zhang, F.; Yi, H.; Lei, A. W.; Visible Light Promoted Benzylic Csp3-H Bond Activation and Functionalization, *Acta Chim. Sinica,* 2017, 75(1): 15-21.
31) Hu, X.; Zhang, G. T.; Bu, F. X.; Lei, A. W.; Visible-Light-Mediated Anti-Markovnikov Hydration of Olefins, *ACS Catal.*, **2017**, 7, 1432–1437.
32) Wang, P.; Tang, S.; Huang, P. F.; Lei, A. W.; Electrocatalytic Oxidant-Free Dehydrogenative C-H/S-H Cross-Coupling, *Angew. Chem. Int. Ed.* **2017**, 56, 3009-3013.
33) Wu, K.; Meng, L. K.; Huai, M. M.; Huang, Z. L.; Liu, C.; Qi, X. T.; Lei, A. W.; Palladium-catalyzed aerobic (1+2) annulation of Csp3 – H bonds with olefin for the synthesis of 3-azabicyclo[3.1.0]hex-2-ene, *Chem. Commun.*, **2017**, 53, 2294-2297.
34) Bian, C. L.; Singh, A. K.; Niu, L. B.; Yi, H.; Lei, A. W.; Visible-Light-Mediated Oxygenation Reactions using Molecular Oxygen, *Asian J. Org. Chem,* **2017**, *6*, 386–396.
35) Tang, S.; Gao, X. L.; Lei, A. W.; Electrocatalytic intramolecular oxidative annulation of N-aryl enamines into substituted indoles mediated by iodides, *Chem. Commun.*, **2017**,53, 3354-3356.
36) Song, C. L.; Yi, H.; Dou, B. W.; Li, Y. Y.; Singh, A. K.; Lei, A. W.; Visible-light-mediated C2-amination of thiophenes by using DDQ as an organophotocatalyst, *Chem. Commun.*, **2017**, 53, 3689 - 3692.
37) Niu, L. B.; Yi, H.; Wang, S. C.; Liu, T. Y.; Liu, J. M.; Lei, A. W.; Photo-induced oxidant-free oxidative C–H/N–H cross-coupling between arenes and azoles, *Nature Commun.*, **2017**, 8, DOI: 10.1038/ncomms14226.
38) Yi, H.; Yang, D. L.; Xin, J.; Qi, X. T.; Lan, Y.; Deng, Y.; Pao, C. W.; Lee, J. F.; Lei, A. W.; Unravelling the hidden link of lithium halides and application in the

synthesis of organocuprates, *Nature Commun.*, **2017**, 8, DOI: 10.1038/ncomms14794

39) Singh, A. K.; Yi, H.; Zhang, G. T.; Bian, C. L.; Pei, P. K.; Lei, A. W.; Photoinduced Oxidative Cross-Coupling for O-S Bond Formation: A Facile Synthesis of Alkyl Benzenesulfonates, *Synlett*, **2017**, *28*, DOI: 10.1055/s-0036-1588728
40) Wen, J. W.; Tang, S.; Zhang, F.; Shi, R. Y.; Lei, A. W.; Palladium/Copper Co-catalyzed Oxidative C-H/C-H Carbonylation of Diphenylamines: A Way To Access Acridones, *Org. Lett.,* **2017**, 19 (1), pp 94–97.
41) Yue, X. Y.; Qi, X. T.; Bai, R. P.; Lei, A. W.; Lan, Y.; Mononuclear or Dinuclear? Mechanistic Study of the Zinc-Catalyzed Oxidative Coupling of Aldehydes and Acetylenes, *Chem. Eur. J.*. **2017**, *23*, 6419–6425.
42) Wang, P.; Tang, S.; Lei, A. W.; Electrochemical Intramolecular Dehydrogenative C-S Bond Formation for the Synthesis of Benzothiazoles, *Green Chem*., **2017,** *19*, 2092-2095.
43) Liao, F.; Shi, R. Y.; Sha, Y. C.; Xia, J. H.; Liao, W. L.; Lei, A. W.; Pd/Cu-Catalyzed Dual C-H Bond Carbonylation towards the Synthesis of Fluorazones, *Chem. Commun.,* **2017***, 53,* 4354-4357.
44) Wu, Y.; Huang, Z. Y; Luo, Y.; Liu, D.; Deng, Y.; Yi, H.; Lee, J. F.; Pao, C. W.; Chen, J. L.; Lei, A. W., X-ray Absorption and Electron Paramagnetic Resonance Guided Discovery of the Cu-Catalyzed Synthesis of Multiaryl-Substituted Furans from Aryl Styrene and Ketones Using DMSO as the Oxidant. *Org. Lett.* **2017,** *19,* 2330−2333.
45) Zeng, L.; Tang, S.; Wang, D.; Deng, Y.; Chen, J. L.; Lee, J. F.; Lei, A. W., Cobalt-Catalyzed Intramolecular Oxidative C(sp^3)–H/N–H Carbonylation of Aliphatic Amides. *Org. Lett.* **2017**, *19 (8)*, 2170–2173.
46) Wen, J. W.; Zhang, F.; Shi, W. Y.; Lei, A. W., Metal-Free Direct Alkylation of Ketene Dithioacetals by Oxidative C(sp^2)-H/C(sp^3)-H Cross-Coupling. *Chem. Eur. J.* **2017**, *23*, 8814-8817.
47) Wen, J. W.; Shi, W. Y.; Zhang, F.; Liu, D.; Tang, S.; Wang, H. M.; Lin, X. M.; Lei, A. W., Electrooxidative Tandem Cyclization of Activated Alkynes with Sulfinic Acids To Access Sulfonated Indenones. *Org. Lett.* **2017,** *19*, 3131-3134..
48) Lu, Lijun; Cheng, Danyang; Zhan, Yuanfeng; Shi, Renyi; Chiang, Chien-Wei; Lei, Aiwen, Metal-free radical oxidative alkoxycarbonylation and imidation of alkanes. *Chem. Commun.* **2017**, *53*, 6852 – 6855.
49) Yi, Hong; Zhang, Guoting; Wang, Huamin; Huang, Zhiyuan; Wang, Jue; Singh, Atul K.; Lei, Aiwen, Recent Advances in Radical C-H Activation/Radical Cross-Coupling. *Chem. Rev.* **2017**, *117*, 9016 – 9085.
50) Crabtree, Robert H.; Lei, Aiwen, Introduction: C-H Activation. *Chem. Rev.* **2017,** *117*, 8481 – 8482.

51) Yi, Hong; Chen, Hong; Bian, Changliang; Tang, Zilu; Singh, Atul K.; Qi, Xiaotian; Yue, Xiaoyu; Lan, Yu; Lee, Jyh-Fu; Lei, Aiwen, Coordination strategy-induced selective C-H amination of 8-aminoquinolines. *Chem. Commun.* **2017,** *53,* 6736 – 6739.
52) Chen, Meng; Li, Yang; Tang, Hong; Ding, Hao; Wang, Kai; Yang, Lingen; Li, Cuiting; Gao, Meng; Lei, Aiwen, Bu4NI-Catalyzed Oxygen-Centered Radical Addition between Acyl Peroxides and Isocyanides. *Org. Lett.* **2017,** *19,* 3147 – 3150.
53) Lu, Fangling; Chen, Ziyue; Li, Zhen; Wang, Xiaoyan; Peng, Xinyue; Li, Cong; Fang, Lingtong; Liu, Dong; Gao, Meng; Lei, Aiwen, Palladium/Copper-Catalyzed Oxidative Coupling of Arylboronic Acids with Isocyanides: Selective Routes to Amides and Diaryl Ketones. *Org. Lett.*, **2017***, 19 (15),* pp 3954–3957.
54) Yi, Hong; Tang, Zilu; Bian, Changliang; Chen, Hong; Qi, Xiaotian; Yue, Xiaoyu; Lan, Yu; Lee, Jyh-Fu; Lei, Aiwen, Oxidation-induced C-H amination leads to a new avenue to build C-N bonds. *Chem. Commun.* **2017**, *53*, 8984 – 8987.
55) Yi, Hong; Lei, Aiwen, Pd-Catalyzed Hydroxylation of Aryl Boronic Acids Using In Situ Generated Hydrogen Peroxide. *Chem. Eur. J.* **2017**, *23*, 10023–10027.
56) Zhang Lingling; Yi, Hong; Wang, Jue; Lei, Aiwen, Visible-Light Mediated Oxidative C-H/N-H Cross-Coupling between Tetrahydrofuran and Azoles using Air. *J. Org. Chem.* **2017**, *82*, 10704–10709.
57) Gao, Meng; Chen, Meng; Li, Yang; Tang, Hong; Ding, Hao; Wang, Kai; Yang, Lingen; Li, Cuiting; Lei, Aiwen. Palladium-Catalyzed Aerobic Oxidative Cross-Esterification of Aldehydes with Alcohols. *Asian J. Org. Chem.*, **2017**, *6*, 1566-1568.
58) Lei, Aiwen; Yi, Hong; Hu, Xia. A method for utilizing copper catalytic synthesis of dihydrofuran derivative method. Patent: CN104910104 B, **2017**.
59) Liu, Kun; Tang, Shan; Huang, Pengfei; Lei, Aiwen. External oxidant-free electrooxidative [3 + 2] annulation between phenol and indole derivatives. *Nature Commun.* **2017**, *8*, 775.
60) Wu, Jiwei; Liao, Zhixiong; Liu, Dong; Chiang, Chien-Wei; Li, Zheng; Zhou, Zhonghao; Yi, Hong; Zhang, Xu; Deng, Zixin; Lei, Aiwen. From Anilines to Quinolines: Iodide- and Silver-Mediated Aerobic Double C−H Oxidative Annulation–Aromatization. *Chem. Eur. J.* **2017**, *23*, 15874-15878.
61) Yan, Haiming; Huang, Zhiliang; Chen, Meng; Li, Cuiting; Chen, Ya; Gao, Meng; Lei, Aiwen. Elemental sulfur as a sulfuration agent in the copper-catalyzed C-H bond thiolation of electron-deficient arenes. *Org. Biomol. Chem.* **2017**, *15*, 8276-8279.
62) Huang, Zhiyuan; Liu, Dong; Camacho-Bunquin, Jeffrey; Zhang, Guanghui; Yang, Dali; López-Encarnación, Juan M.; Xu, Yunjie; Ferrandon, Magali S.; Niklas, Jens; Poluektov, Oleg G.; Jellinek, Julius; Lei, Aiwen; Bunel, Emilio E.; Delferro, Massimiliano. Supported Single-Site Ti(IV) on a Metal-Organic Framework for the Hydroboration of Carbonyl Compounds. *Organometallics*, **2017**, *36*, 3921 – 3930.

63) Niu, Linbin; Liu, Jiamei; Yi, Hong; Wang, Shengchun; Liang, Xing-An; Singh, Atul K.; Chiang, Chien-Wei; Lei, Aiwen. Visible-Light-Induced External Oxidant-Free Oxidative Phosphonylation of C(sp^2)-H Bonds. *ACS Catalysis*, **2017**, *7*, 7412 – 7416.
64) Wu, Jiwei; Zhou, Yi; Zhou, Yuchen; Chiang, Chien-Wei; Lei, Aiwen. Electro-Oxidative C(sp^3)-H Amination of Azoles via Intermolecular Oxidative C(sp^3)-H/N-H Cross-Coupling. *ACS Catal.* **2017**, *7*, 8320-8323.
65) Wu, Jiwei; Zhou, Yuchen; Wu, Ting; Zhou, Yi; Chiang, Chien-Wei; Lei, Aiwen. From Ketones, Amines, Carbon Monoxide to 4-Quinolones: Palladium-Catalyzed Oxidative Carbonylation. *Org. Lett.* **2017**, *19*, 6432-6435.

2016

66) Zhao, Ying; Yan, Haiming; Lu, Hanwei; Huang, Zhiliang; Lei, Aiwen. Para-Selective C-H bond functionalization of iodobenzenes. *Chem. Commun.* **2016,** *52,* 11366-11369
67) Lei, Aiwen; Wen, Jiangwei. Method for synthesizing acridone derivatives through Pd-Cu co-catalysis. Faming Zhuanli Shenqing. **2016, CN:** 106187890 A 20161207
68) Lei, Aiwen; Yi, Hong; Niu, Linbin; Wang, Shengchun. Method for synthesizing acetal derivatives via photoatalysis. Faming Zhuanli Shenqing. **2016, CN:** 106083537 A 20161109
69) Tang, Shan; Gao, Xinlong; Lei, Aiwen. Decarboxylative (4+1) Oxidative Annualtion of Malonate Monoesters with 2-Vinylpyridine Derivatives. *Adv. Synth. Catal.* **2016,** *358,* 2878-2882
70) Qi, X. T.; Bai, R. P; Zhu, L.; Jin, R.; Lei, A. W.; Lan, Y., Mechanism of Synergistic Cu(II)/Cu(I)-Mediated Alkyne Coupling: Dinuclear 1,2-Reductive Elimination after Minimum Energy Crossing Point. *J. Org. Chem.,* **2016**, *81 (4)*, 1654–1660.
71) Wu, X. D.; Li, K.; Wang, S. Y.; Liu, C.; Lei, A. W., Acid-Promoted Cross-Dehydrative Aromatization for the Synthesis of Tetraaryl-Substituted Pyrroles. *Org. Lett.,* **2016**, *18 (1)*, 56–59.
72) Wang, H. M.; Lu, Q. Q.; Qian, C. H.; Liu, C.; Liu, W.; Chen, K.; Lei, A. W., Solvent-Enabled Radical Selectivities: Controlled Syntheses of Sulfoxides and Sulfides. *Angew. Chem. Int. Ed.*, **2016**, *55*, 1094-1097.
73) Yi, H.; Yang, D. L.; Luo, Y.; Pao, C. W.; Lee, J. F.; Lei, A. W., Direct Observation of Reduction of Cu(II) to Cu(I) by P-H Compounds using XAS and EPR Spectroscopy. *Organometallics.* **2016**, 35(10), 1426-1429.
74) Wu, K.; Huang, Z. L.; Ma, Y. Y.; Lei, A. W., Copper-catalyzed and iodide-promoted aerobic C–C bond cleavage/C–N bond formation toward the synthesis of amides. *RSC Adv.*, **2016**, *6*, 24349-24352.
75) Wu. Q.; Luo, Y.; Lei, A. W.; You, J. S., Aerobic Copper-Promoted Radical-Type Cleavage of Coordinated Cyanide Anion: Nitrogen Transfer to Aldehydes to Form Nitriles. *J. Am. Chem. Soc.*, **2016**, *138* (9), 2885–2888.

76) Huang, Z. L.; Zhang, D. C.; Qi, X. T.; Yan, Z. Y.; Wang, M. F.; Yan, H. M.; Lei, A. W., Radical-Radical Cross-Coupling for C-S Bond Formation. *Org. Lett.* ***2016****, 18, 2351−2354*
77) Hao, W. Y.; Tian, J.; Li, W.; Shi, R. Y.; Huang, Z. L.; Lei, A. W., Nickel-Catalyzed Oxidative C-H/N-H Isocyanide Insertion: An Efficient Synthesis of Iminoisoindolinone Derivatives. C*hem. Asian J.* ***2016****, 11, 1664–1667.*
78) Yi, H.; Zhang, G. H.; Xin, J.; Deng, Y.; Miller, T. Jeffrey; Kropf, A. Jeremy; Bunel, E. Emilio; Qi, X. T.; Lan, Y.; Lee, J. F.; Lei, A. W., Homolytic cleavage of the O-Cu(II) bond: XAFS and EPR spectroscopy evidence for one electron reduction of Cu(II) to Cu(I). *Chem. Commun.*, **2016**, 52, 6914-6917.
79) Peng, P.; Peng, L.; Wang, G.; Wang, F.; Luo, Y.; Lei, A. W., Visible light mediated aerobic radical C–H phosphorization toward arylphosphonates. *Org. Chem. Front.*, **2016**, 3, 749-752.
80) Tang, S.; Wang, P.; Li, H.; Lei, A. W., Multimetallic catalyzed radical oxidative C(sp3)–H/C(sp)–H cross-coupling between unactivated alkanes and terminal alkynes, *Nature commun.* **2016**, 7, 11676, DOI:10.1038/ncomms11676
81) Zhang, G.; Yi, H.; Xin, J.; Deng, Y.; Bai, R.; Huang, Z.; Miller, T. Jeffrey; Kropf, A. Jeremy; Bunel, E. Emilio;; Qi, X.; Lan, Y.; Lei, A. W., Aromatic C-H Bond Cleavage by Cu(I) Ate-Complex, *Org. Chem. Front.*, **2016**, *3,* 975-978
82) Zhang, X.; Yi, H.; Luo, Y.; Lei, A. W., Tuning O2 reactivity through synergistic Photo/Copper catalysis: Direct synthesis of 4-aryl tetralones via Cyclodimerization-oxygenation of styrenes, *Chem. Asian J.* **2016**, 11, 2117–2120
83) Liu, K.; Zou, M. Z.; Lei, A. W., Aerobic Oxidative Carbonylation of Enamides by Merging Palladium with Photoredox Catalysis, *J. Org. Chem.*, **2016**, 81, 7088-7092
84) Li, Y. X.; Liu, D.; Liu, C.; Lei, A. W., Oxidative β-Csp3-H Functionalization of tBuOH: A Selective Radical/Radical Cross-Coupling Access to β-Hydroxy Thioethers, *Chem. Asian J.* **2016**, 11, 2246 –2249.
85) Duan, Z. L.; Li, W.; Lei, A. W., Nickel-Catalyzed Reductive Cross-Coupling of Aryl Bromides with Alkyl Bromides: Et3N as the Terminal Reductant, *Org. Lett.* ***2016****,* 18, 4012–4015
86) Huang, Z. Y.; Lu, Q. Q.; Liu, Y. C.; Liu, D.; Zhang, J.; Lei, A. W., Regio- and Stereoselective Oxysulfonylation of Allenes, *Org. Lett.* ***2016****,* 18, 3940–3943
87) Zhang, G. T.; Zhang, L. L.; Yi, H.; Luo, Y.; Qi, X. T.; Tung, C. H.; Wu, L. Z.; Lei, A. W., Visible-light induced oxidant-free oxidative cross-coupling for constructing allylic sulfones from olefins and sulfinic acids, *Chem. Commun.*, **2016**, 52, 10407-10410
88) Lu, L. J.; Shi, R. Y.; Liu, L. Y.; Yan, J. W.; Lu, F. L.; Lei, A. W., Oxidative Alkane C-H Alkoxycarbonylation, *Chem. Eur. J.* **2016**, 22,14484 –14488

89) Wang, H. M.; Wang, G. Y.; Lu, Q. Q.; Chiang, C. W.; Peng, P.; Zhou, J. F.; Lei, A. W., Catalyst-Free Difunctionalization of Activated Alkenes in Water: Efficient Synthesis of b-Keto Sulfides and Sulfones, *Chem. Eur. J.* **2016**, 22,14489 –14493
90) Zhang, G. T.; Hu, X.; Chiang, C. W.; Yi, H.; Pei, P. K.; Singh, K, Atul.; Lei, A. W., Anti-Markovnikov Oxidation of β-Alkyl Styrenes with H2O as the Terminal Oxidant, *J. Am. Chem. Soc*., **2016**, 138, 12037−12040
91) Zhang, L. L.; Yi, H.; Wang, J.; Lei, A. W., Visible-light induced oxidative Csp3 –H activation of methyl aromatics to methyl esters, *Green Chem*., **2016**, 18, 5122–5126
92) Peng, P.; Lu, Q. Q.; Peng, L.; Liu, C.; Wang, G. Y.; Lei, A. W., Dioxygen-induced oxidative activation of a P–H bond: radical oxyphosphorylation of alkenes and alkynes toward β-oxy phosphonates, *Chem. Commun.*, **2016**, 52, 12338-12341
93) Shi, R. Y.; Lu, L. J.; Xie, H. Y.; Yan, J. W.; Xu, T.; Zhang, H.; Qi, X. T; Lan, Y.; Lei, A. W.; C8-H Bond Activation vs C2-H Bond Activation: From Naphthyl Amines to Lactams, *Chem. Commun.*, **2016,** 52, 13307 - 13310
94) Yi, H.; Song, C. L.; Li, Y. Y.; Pao, C. W.; Lee, J. F.; Lei, A. W.; EXAFS revealing Single-Electron Transfer between CuX2 and Thiols: Application in Markovnikov-type Hydrothiolation of Styrenes, *Chem. Eur. J.* **2016**, DOI: 10.1002/chem.20160408
95) Wai Chung Fu, Yong Wu, Chau Ming So, Shun Man Wong, Aiwen Lei, and Fuk Yee Kwong. Catalytic Direct C2-Alkenylation of Oxazoles at Parts per Million Levels of Palladium/PhMezole-Phos Complex. *Org. Lett.,* **2016**, 18, 5300-5303

2015

96) Deng, Y.; Zhang, G. H.; Qi, X. T.; Liu, C.; Miller, T. Jeffrey; Kropf, A. Jeremy; Bunel, E. Emilio; Lan, Y.; Lei, A. W., Revealing the halide effect on the aerobic oxidation kinetics of Cu(I) to Cu(II). *Chem. Commun.* **2015,** *51,* 318-321.
97) Yi, H.; Jutand, A.; Lei, A. W., Evidence for the Interaction Between tBuOK and 1,10-Phenanthroline to form the 1,10-Phenanthroline Radical Anion: A Key Step for the Activation of Aryl Bromides by Electron Transfer. *Chem. Commun.* **2015,** *51*, 545 - 548.
98) Yuan, J. W.; Wang, J.; Zhang G. H.; Liu, C.; Qi, X. T.; Lan, Y.; Miller, T. Jeffrey; Kropf, A. Jeremy; Bunel, E. Emilio; Lei, A. W., Bimetallic Zinc Complex --- Active Species in Coupling of Terminal Alkynes with Aldehydes via Nucleophilic Addition/Oppenauer Oxidation. *Chem. Commun.* **2015,** *51*, 576 - 579.
99) Wu, K.; Huang, Z. L.; Liu, C.; Zhang, H.; Lei, A. W., Aerobic C-N Bond Activation: A Simple Strategy to Construct Pyridines and Quinolines. *Chem. Commun.* **2015**, *51*, 2286 - 2289.
100) Cao, H.; Liu, D.; Liu, C.; Hu, X. Q.; Lei, A. W., Copper-Catalysed Oxidative Alkenylation of Thioethers via Csp^3-H Functionalization. *Org. Biomol. Chem.* **2015**, *13*, 2264 - 2266.

101) Liao, Z. X.; Yi, H.; Li, Z.; Fan, C.; Zhang, X.; Liu, J.; Deng, Z. X.; Lei, A. W., Copper-Catalyzed Radical Carbooxygenation: Alkylation and Alkoxylation of Styrenes. *Chem. Asian J.* **2015,** *10*, 96-99.

102) Wu Li, Zhengli Duan, Xueye Zhang, Heng Zhang, Mengfan Wang, Ru Jiang, Hongyao Zeng, Chao Liu and Aiwen Lei, From Anilines to Isatins: Palladium-Catalyzed Oxidative C−H Double Carbonylation. *Angew. Chem. Int. Ed.* **2015**, *54,* 1893-1896.

103) Ben Cheng, Hong Yi, Chuan He, Chao Liu, and Aiwen Lei, Revealing the Ligand Effect on Copper(I) Disproportionation via Operando IR Spectra. *Organometallics* **2015,** *34(1)*, 206–211.

104) Jianming Liu, Xin Zhang, Hong Yi, Chao Liu, Ren Liu, Heng Zhang, Kelei Zhuo, and Aiwen Lei. Chloroacetate-Promoted Selective Oxidation of Heterobenzylic Methylenes under Copper Catalysis. *Angew. Chem. Int. Ed.* **2015,** *54,* 1261–1265.

105) Yuan, J. W.; Liu, C.; Lei, A. W., Construction of N-Containing Heterocycles via Oxidative Intramolecular N-H/X-H Coupling. *Chem. Commun.* **2015,** *51,* 1394 – 1409.

106) Shan Tang, Kun Liu, Chao Liu, and Aiwen Lei, Olefinic C-H functionalization through radical alkenylation. *Chem. Soc. Rev.* **2015,** *44(5),* 1070-1082.

107) Wang T., Chen S. T., Shao A. L., Gao, M., Huang, Y. F., and Lei, A. W., Silver-Mediated Selective Oxidative Cross-Coupling between C−H/P−H: A Strategy to Construct Alkynyl(diaryl)phosphine Oxide. *Org. Lett.* **2015**, *17*, 118−121.

108) Shi, R. Y.; Zhang, H.; Lu, L. J.; Gan, P.; Sha, Y. C.; Zhang, H.; Liu, Q.; Beller, M.; Lei, A. W., (E)-*α, β*-Unsaturated Amides from Tertiary Amines, Olefins and CO *via* Pd/Cu-Catalyzed Aerobic Oxidative *N*-Dealkylation, *Chem. Commun.* **2015,** *51,* 3247 - 3250.

109) Liu, D.; Lei, A. W., Iodine-Catalyzed Oxidative Coupling Reactions Utilizing C-H and X-H as Nucleophiles. *Chem. Asian. J.,* **2015,** *10,* 806 – 823.

110) Liu, D.; Li, Y. X.; Qi, X. T.; Liu, C.; Lan, Y.; Lei, A. W., Nickel-Catalyzed Selective Oxidative Radical Cross-Coupling: An Effective Strategy for Inert Csp^3−H Functionalization. *Org. Lett.* **2015**, *17,* 998–1001.

111) Lu, Q. Q.; Chen, J. Y.; Liu, C.; Huang, Z. Y.; Peng, P.; Wang, H. M.; Lei, A. W., O2-mediated C(sp^2)–X bond oxygenation: autoxidative carbon–heteroatom bond formation using activated alkenes as a linkage. *RSC Adv.,* **2015**, *5*, 24494–24498.

112) Li, W.; Duan, Z. L.; Jiang, R.; Lei, A. W., Palladium/Copper-Catalyzed Aerobic Oxidative C–H Carbonylation for the Synthesis of *o*-Aminobenzoates. *Org. Lett.,* **2015,** *17(6),* 1397-1400.

113) Ke, J.; Tang, Y. L.; Yi, H.; Li, Y. L.; Cheng, Y. D.; Liu, C.; Lei, A. W., Copper-Catalyzed Radical/Radical C(sp^3)-H/P-H Cross-Coupling: α-Phosphorylation of Aryl Ketone O-Acetyloximes. *Angew. Chem. Int. Ed.,* **2015**, *54*, 6604-6607.

114) Wang, T.; Shao, A. L.; Feng, H. Y.; Yang, S. W.; Gao, M.; Tian, J.; Lei, A. W.,

An Efficient [3+2] Cycloaddition for the Synthesis of Substituted Pyrazolo[1,5-c] Quinazolines. *Tetrahedron* **2015**, *71,* 4473-4477.

115) Yuan, J. W.; Liu, C.; Lei, A. W., Oxidative Cross S-H/S-H Coupling: Selective Synthesis of Unsymmetrical Aryl tert-Alkyl Disulfanes. *Org. Chem. Front.* **2015,** *2,* 677 - 680.

116) Liu, J.; Zhang, H.; Yi, H.; Liu, C.; Lei, A. W., A facile access for the C-N bond formation by transition metal-free oxidative coupling of benzylic C-H bonds and amides. *Sci. China Chem.* **2015,** *58*, 1323-1328.

117) Zhang, G. T.; Bian, C. L.; Lei, A. W. W, Advances in Visible-light-mediated Oxidative Coupling Reactions. *Chin. J. Catal.* **2015**, *36*, 1428–1439.

118) Xia, J. H.; Shao, A. L.; Tang, S.; Gao, X. L.; Gao, M.; Lei, A. W. W, Palladium-catalysed oxidative cross-esterification between two alcohols. *Org. Biomol. Chem.*, **2015**, *13,* 6154-6157.

119) Tang, S.; Liu, K.; Long, Y.; Qi, X. T.; Lan, Y.; Lei, A. W., Tuning radical reactivity by iodine in oxidative C(sp^3)-H/C(sp)-H cross-coupling: an easy way toward furans and indolizines. *Chem. Commun.* **2015**, *51*, 8769-8772.

120) Ma, Y. Y.; Zhang, D. C.; Yan, Z. Y.; Wang, M. F.; Bian, C. L.; Gao, X. L.; Emilio, E. Bunel, Lei, A. W., Iron-Catalyzed Oxidative C-H/C-H Cross-Coupling between Electron-Rich Arenes and Alkenes. *Org. Lett.* **2015**, *17(9)*, 2174–2177.

121) Cao, H.; Yuan, J. W.; Liu, C.; Hu, X. Q.; Lei, A. W., Iodine-Catalyzed C-H/S-H Oxidative Coupling: from 1,3-Diketones and Thiophenols to β-Dicarbonyl Thioethers. *RSC Adv.* **2015**, *5*, 41493 - 41496.

122) Lu, Q. Q.; Wang, H. M.; Peng, P.; Liu, C.; Huang, Z. Y.; Luo, Y.; Lei, A. W., Autoinductive Thiolation/Oxygenation of Alkenes at Room Temperature. *Org. Chem. Front.* **2015**, **2,** 908 - 912.

123) Tang, S.; Liu, K.; Long, Y.; Gao, X. L.; Gao, M.; Lei, A. W., Iodine-Catalyzed Radical Oxidative Annulation for the Construction of Dihydrofurans and Indolizines. *Org. Lett.* **2015**, *17(10),* 2404-2407.

124) Liu, D.; Liu, C.; Lei, A. W., Carbon-Centered Radical Addition to C=X Bonds for C-X Bond Formations. *Chem. Asian J.* **2015**, *10,* 2040 – 2054.

125) Lu, Q. Q.; Zhang, J.; Peng, P.; Zhang, G. H.; Huang, Z. L.; Yi, H.; Miller, J. T.; Lei, A. W., Operando X-ray Absorption, EPR Evidence for Single Electron Redox in Copper Catalysis. *Chem. Sci.* **2015**, *6*, 4851-4854.

126) Zhang, J.; Lu, Q. Q.; Liu, C.; Lei, A. W., Recent advances in oxidative coupling reactions. *Chin. J. Org. Chem.* **2015**, *35(4)*, 743-759.

127) Duan, H.; Li, M. H.; Zhang, G. H.; Gallagher, James R.; Huang, Z. L.; Sun, Y.; Luo, Z.; Chen, H. Z.; Miller, Jeffrey T.; Zou, R. Q.; Lei, A. W.; Zhao, Y. L., Single-Site Palladium(II) Catalyst for Oxidative Heck Reaction: Catalytic Performance and Kinetic Investigations. *ACS Catal.*, **2015**, *5*, 3752–3759.

128) Qi, X. T.; Li, Y. Z.; Zhang, G. H.; Li, Y.; Lei, A. W.; Liu, C.; Lan, Y., Dinuclear versus Mononuclear Pathways in Zinc Mediated Nucleophilic Addition: A Combined Experimental and DFT Study. *Dalton Trans.*, **2015**, *44,* 11165-11171.

129) Ma, Y. Y.; Yan, Z. Y.; Bian, C. L.; Li, K.; Zhang, X. W.; Wang, M. F.; Gao, X. L.; Zhang, H.; Lei, A. W., Synthesis of oxazoles by silver catalysed oxidative decarboxylation-cyclization of α-oxocarboxylates and isocyanides. *Chem. Commun.* **2015**, *51,* 10524-10527.

130) Lu, Q. Q.; Liu, Z. L.; Luo, Y.; Zhang, G. H.; Huang, Z. Y.; Wang, H. M.; Liu, C.; Miller, J. T.; Lei, A. W., Copper-/Cobalt-Catalyzed Highly Selective Radical Dioxygenation of Alkenes. *Org. Lett.* **2015**, *17 (14),* 3402–3405.

131) Zhang, G. T.; Liu, C.; Yi, H.; Meng, Q. Y.; Bian, C. L.; Chen, H.; Jian, J. X.; Wu, L. Z.; Lei, A. W., External Oxidant-Free Oxidative Cross-Coupling: A Photoredox Cobalt-Catalyzed Aromatic C-H Thiolation for Constructing C-S Bonds. *J. Am. Chem. Soc.* **2015**, *137*, 9273–9280.1

132) Yi, H.; Bian, C. L.; Hu. X.; Niu, L. B.; Lei, A. W., Visible Light Mediated Efficient Oxidative Benzylic sp^3 C−H to Ketone Derivatives under Mild Conditions using O_2. *Chem. Commun.* **2015**, *51,* 14046 - 14049.

133) Huang, Z. Y.; Tang, S.; Lei, A. W., Oxidative cross-coupling: an alternative way for C–C bond formations. *Sci. Bull.* **2015**, *60*, 1391-1394.

134) Lei, A. W.; Yi, H.; Hu, X., Method for synthesis of dihydrofuran derivative via copper-catalysis. Faming Zhuanli Shenqing (**2015**), CN 104910104 A 20150916.

135) Liu, J. M.; Song, W. W.; Yue, Y. Y.; Liu, R.; Yi, H.; Zhuo, K. L.; Lei, A. W., $Pd(OAc)_2$/S=PPh_3 Accelerated Activation of *gem*-Dichloroalkenes for the Construction of 3-Arylchromones. *Chem. Commun.* **2015**, ***51,*** 17576 – 17579.

136) Lu, Q. Q.; Peng, P.; Luo, Y.; Zhao, Y.; Zhou, M. X.; Lei, A. W., Copper-Catalyzed Aerobic Decarboxylation/Ketooxygenation of Electron-Deficient Alkenes. *Chem. Eur. J.* **2015***,* 21*,* 18580 - 18583.

137) Xin, J.; Zhang, G. H.; Deng, Y.; Zhang, H.; Lei, A. W., Which one is faster? A kinetic investigation of Pd and Ni catalyzed Negishi-type oxidative coupling reactions. *Dalt. Trans.* **2015**, *44,* 19777 - 19781.

138) Tang, S.; Zeng, L.; Liu, Y. C.; Lei, A. W., Zinc-Catalyzed Dehydrogenative Cross-Coupling of Terminal Alkynes with Aldehydes: A Simple Access to Ynones. *Angew. Chem. Int. Ed.* **2015***, 54,* 15850 –15853.

139) Liu, C.; Yuan, J. W.; Gao, M.; Tang, S.; Li, W.; Shi, R. Y.; Lei, A. W., Oxidative Coupling between Two Hydrocarbons: An Update of Recent C-H Functionalizations. *Chem. Rev.,* **2015***, 115 (22),* 12138–12204.

140) Yi, H.; Liao, Z. X.; Zhang, G. H.; Zhang, G. T.; Fan, C.; Zhang, X.; Bunel, E. E.; Pao, C. W.; Lei, A. W., Evidence of Cu(I)/Cu(II) Redox Process by XAFS and EPR Spectroscopy: Direct Synthesis of Dihydrofurans from β-Ketocarbonyl Derivatives and Olefins. *Chem. Eur. J.* **2015***, 21,* 18925 - 18929.

141) Liu, C.; Lu, Q. Q.; Huang, Z. Y.; Zhang, J.; Liao, F.; Peng, P.; Lei, A. W., NMP and O_2 as Radical Initiator: Trifluoromethylation of Alkenes to Tertiary *β*-Trifluoromethyl Alcohols at Room Temperature. *Org. Lett.* **2015,** *17,* 6034−6037.

142) Wu, K.; Huang, Z. L.; Qi, X. T.; Li, Y. Z.; Zhang, G. H.; Liu, C.; Yi, H.; Meng, L. K.; Bunel, E. E.; Miller, J. T.; Pao, C. W.; Lee, J. F.; Lan, Y.; Lei, A. W., Copper-Catalyzed Aerobic Oxidative Coupling: From Ketone and Diamine to Pyrazine. *Sci. Adv.* **2015**, *Vol. 1, no. 9,* e1500656. **DOI:** 10.1126/sciadv.1500656.

143) Lu, Q. Q.; Yi, H.; Lei, A. W., Autoxidative Coupling and Its Applications to C-H Functionalization. *Acta Chim. Sinica* **2015***, 73,* 1245—1249.

144) Zhou, L. L.; Yi, H.; Zhu, L.; Qi, X. T.; Jiang, H. P.; Liu, C.; Feng, Y. Q.; Lan, Y.; Lei, A. W., Tuning the Reactivity of Radical through a Triplet Diradical Cu(II) Intermediate in Radical Oxidative Cross-Coupling. *Sci. Rep.* **2015**, *5*, 15934, doi: 10.1038/srep15934.

145) Lei, A. W.; Li, W., Method for preparing isatoic anhydride derivatives. Faming Zhuanli Shenqing (**2015**), CN 105037291 A 20151111.

146) Lei, A. W.; Lu, L. J., Method for preparing cycloalkyl formate. Faming Zhuanli Shenqing (**2015**), CN 105017017 A 20151104.

147) Lei, A. W.; Zhang, H.; Xin, J.; Lin, C. T., A method for directly preparing nanometer palladium from palladium with zero valent. Faming Zhuanli Shenqing (**2015**), CN 104985195 A 20151021.

148) Lei, Aiwen; Huang, Zhiliang; Liu, Dong. Application of organozinc reagents in oxidative coupling reactions. *Zinc Catalysis.* **2015,** 275-302

2014

149) Zhang, G.H.; Yi, H.; Zhang, G.T.; Deng, Y.; Bai, R.P.; Zhang, H.; Miller, J.T.; Kropf, A.J.; Bunel, E.E.; Lei, A. W., Direct Observation of Reduction of Cu(II) to Cu(I) by Terminal Alkynes. *J Am Chem Soc* **2014,** 136, 924-926

150) Liu, J.; Liu, Q.; Yi, H.; Qin, C.; Bai, R. P.; Qi, X. T.; Lan, Y.; Lei, A. W., Visible Light Mediated Decarboxylation / Oxidative Amidation of α-Keto Acids with Amines under Mild Conditions Using O_2. *Angew Chem Int Ed* **2014**, *53*, 502

151) Li, W.; Liu, C.; Zhang, H.; Ye, K.Y.; Zhang, G.H.; Zhang, W.Z.; Duan, Z.L.; You, S.L.; Lei, A. W., Palladium-Catalyzed Oxidative Carbonylation of N-allylamines for the synthesis of â-lactams. *Angew Chem Int Ed* **2014**, *53*, 2443

152) Wang, L.; Wang, Y.X.; Liu, C.; Lei, A. W., CO/C-H as the Acylative Reagent: A Palladium-Catalyzed Aerobic Oxidative Carbonylative Esterfication of Alcohols. *Angew Chem Int Ed* **2014**, 53, 5657

153) Meng, L. K.; Liu, C.; Zhang, W.; Zhou, C.; Lei, A. W., Palladium Catalysed β-Selective Oxidative Heck Reaction of Electronrich Olefin. *Chem Commun* **2014**, *50*, 1110

154) Liu, J.; Fan, C.; Yin, H.Y.; Qin, C.; Zhang, G.T.; Zhang, X.; Yi, H.; Lei, A. W.,

Synthesis of 6-acyl phenanthridines by oxidative radical decarboxylation/cyclization of α-oxocarboxylates and isocyanides. *Chem Commun* **2014**, *50*, 2145

155) Liu, D.; Liu, C.; Li, H.; Lei, A. W., Copper-Catalyzed Oxidative C-H/C-H Coupling between Olefins and Simple Ethers. *Chem Commun* **2014**, *50*, 3623

156) Liu, D.; Liu, C.; Lei, A. W., Nickel-catalyzed oxidative cross-coupling of arylboronic acids with olefins. *Pure Appl. Chem.* **2014**, *86,* 321–328

157) Tang, S.; Wu, Y.; Liao, W.Q; Bai, R.P.; Liu, C.; Lei, A. W., Revealing the Metal-like Behavior of Iodine: An Iodide-Catalysed Radical Oxidative Alkenylation. *Chem Commun* **2014**, *50*, 4496

158) Wang, J.; Liu, C.; Yuan, J. W.; Lei, A. W., Fe-Catalysed Oxidative C-H/N-H Coupling between Aldehydes and Simple Amides. *Chem Commun* **2014**, *50*, 4736

159) Liu, J. M.; Yi, H.; Zhang, X; Liu, C.; Liu, R.; Zhang, G.T.; Lei, A. W., *Chem. Commun.* **2014**, *50*, 7636

160) Zhang, G. H.; Li, J.; Deng, Y.; Miller, J.T.; Kropf, A.J.; Bunel, E.E.; Lei,A.W., Structure-Kinetic Relationship Study of Organozinc Reagents. *Chem Commun* **2014**, *50*, 8709

161) Zhou, L. L.; Tang, S.; Qi, X.T.; Lin, C.T.; Liu, K.; Liu, C.; Lan, Y.; Lei, A. W., Transition-Metal-Assisted Radical/Radical Cross-Coupling: A New Strategy to the Oxidative C(sp3)−H/N−H Cross-Coupling. *Org. Lett.*, **2014**, *16,* 3404

162) Gao, M.; Tian, J.; Lei, A. W., A Reagent-Free Oxidative Cyclization Approach to Indolizine Derivatives from α - Picoline Derivatives and Nitroolefins. *Chem Asian J* **2014**, *9*, 2068-2071

163) Shi, W.; Lei, A. W., 1,3-Diyne Chemistry: Synthesis and Derivations. *Tetrehedron Lett* **2014**, *55*, 2763

164) Lu, Q. Q.; Liu, C.; Peng, P.; Liu, Z. L.; Fu, L. J.; Huang, J. G.; Lei, A. W., Copper-Catalyzed Trifluoromethylation-Initiated Radical Oxidative Annulation toward Oxindoles. *Asian J Org Chem* **2014**, *3*, 273

165) Zhang, X.; Yi, H.; Liao, Z. X.; Zhang, G. T.; Fan, C.; Qin, C.; Liu, J.; Lei, A. W., Copper-catalysed direct radical alkenylation of alkyl bromides. *Org. Biomol. Chem.,* **2014,** *12,* 6790-6793.

166) Tang, S.; Yuan, J. W.; Liu, C.; Lei, A. W., Direct oxidative esterification of alcohols. *Dalton Trans.,* **2014,** 43, 13460-13470.

167) Tang, S.; Wu, X. D.; Liao, W. Q.; Liu, K.; Liu, C.; Luo, S. Z.; Lei, A. W., Synergistic Pd/Enamine Catalysis: A Strategy for the C–H/C–H Oxidative Coupling of Allylarenes with Unactivated Ketones. *Org. Lett.*, **2014**, *16*, 3584–3587

168) Lu, Q. Q.; Liu. C.; Huang Z. Y.; Ma. Y. Y; Zhang. J.; Lei, A. W., Relay Cooperation of $K_2S_2O_8$ and O_2 in Oxytrifluoromethylation of Alkenes Using CF_3SO_2Na. *Chem. Commun.,* **2014,** *50,* 14101-14104.

169) Liu, D.; Tang, S.; Yi, H.; Liu, C.; Qi, X. T.; Lan, Y.; Lei, A. W., Carbon-Centered Radical Addition to O=C of Amides or Esters as a Route to C-O Bond

Formations. *Chem. Eur. J.* **2014,** *20*, 15605-15610.

170) Li, J.; Jin, L. Q.; Liu, C.; Lei, A. W., Transmetalation of Ar^1ZnX with $[Ar^2–Pd–X]$ is the rate-limiting step: kinetic insights from a live Pd-catalyzed Negishi coupling. *Org. Chem. Front.,* **2014,** *1*, 50-53.

171) Yuan, J.; Ma, X.; Yi, H.; Liu, C.; Lei, A. W., I_2-Catalyzed Oxidative C(sp^3)-H/S-H Coupling：Utilizing Alkanes and Mercaptans as the Nucleophiles. *Chem. Commun.*, **2014,** *50,* 14386-14389.

172) Yi, H.; Zhang, X.; Qin, C.; Liao, Z. X.; Liu, J.; Lei, A. W., Visible Light-Induced γ-Alkoxynitrile Synthesis *via* Three- Component Alkoxycyanomethylation of Alkenes. *Adv. Synth. Catal.* **2014,** *356,* 2873-2877.

173) Chen, Z. K.; Yan, Q. Q.; Yi, H.; Liu, Z. X.; Lei, A. W.; Zhang, Y. H., Efficient Synthesis of 1,2,3-Triazoles by Copper-Mediated C-N and N-N Bond Formation Starting From N-Tosylhydrazones and Amines. *Chem. Eur. J.* **2014,** *20,* 13692-13697.

174) Ruopeng Bai, Guanghui Zhang, Hong Yi, Zhiliang Huang, Xiaotian Qi, Chao Liu, Jeffrey T Miller, Arthur Jeremy Kropf, Emilio E Bunel, Yu Lan, and Aiwen Lei. Cu(II)/Cu(I)-Synergistic Cooperation to Lead the Alkyne C-H Activation. *J. Am. Chem. Soc.*, **2014**, *136,* 16760–16763.

175) Guoting Zhang, Hong Yi, Hong Chen, Changliang Bian, Chao Liu, and Aiwen Lei, Trisulfur Radical Anion as the Key Intermediate for the Synthesis of Thiophene via the Interaction between Elemental Sulfur and NaOtBu. *Org. Lett.,* **2014,** *16*, 6156-6159.

176) Liu, C.; Liu, D.; Lei, A. W., Recent Advance of Transition-Metal Catalyzed Radical Oxidative Cross-Couplings. *Acc. Chem. Res.* **2014,** *47,* 3459−3470.

2013

177) He, C.; Zhang, G. H.; Ke, J.; Zhang, H.; Miller, J. T.; Kropf, A. J.; Lei, A. W., Labile Cu(I)-Catalyst/Spectator Cu(II)-Species in Copper-Catalyzed C-C Coupling Reaction: Operando IR, In situ XANES/EXAFS Evidence and Kinetic Investigations. *J Am Chem Soc* **2013**, *135*, 488

178) Lu, Q. Q.; Zhang, J.; Zhao, G. L.; Qi, Y.; Wang, H. M.; Lei, A. W., Dioxygen-Triggered Oxidative Radical Reaction: Direct Aerobic Difunctionalization of Terminal Alkynes towards β-Keto Sulfones. *J Am Chem Soc* **2013**, *135*, 11481

179) Muto, K.; Yamaguchi, J.; Lei, A. W.; Itami, K., Isolation, Structure, and Reactivity of an Arylnickel(II) Pivalate Complex in Catalytic C-H/C-O Biaryl Coupling. *J Am Chem Soc* **2013**, *135*, 16384

180) He, C.; Ke, J.; Xu, H.; Lei, A. W., Insights toward the Symbiotic Catalysis Sonogashira Coupling Reaction: Quantitative Kinetic Investigation of Transmetalation. *Angew Chem Int Edit* **2013**, *52*, 1527

181) Wang, J.; Liu, C.; Yuan, J. W.; Lei, A. W., Copper-Catalyzed Oxidative

Coupling of Alkenes with Aldehydes: Direct Access to α, β-unsaturated Ketones. *Angew Chem Int Edit* **2013**, *52*, 2256

182) Liu, D.; Liu, C.; Li, H.; Lei, A. W., Direct Funtionalization of Tetrahydrofuran and 1,4-Dioxane: A Nickel-Catalyzed Oxidative Csp3-H Arylation. *Angew Chem Int Ed* **2013**, *52*, 4453

183) Gao, M.; He, C.; Chen, H. Y.; Bai, R. P.; Cheng, B.; Lei, A. W., Synthesis of Pyrrole by Click Reaction: Silver-Catalyzed Cycloaddition of Terminal Alkynes with isocyanides. *Angew Chem Int Edit* **2013**, *52*, 6958

184) Huang, Z. L.; Jin, L. Q.; Feng, Y.; Peng, P.; Yi, H.; Lei, A. W., Iron-Catalyzed Oxidative Radical Cross-Coupling/Cyclization between Phenol and Olefin. *Angew Chem Int Edit* **2013**, *52*, 7151

185) Lu, Q. Q.; Zhang, J.; Wei, F. L.; Qi, Y.; Wang, H. M.; Liu, Z. L.; Lei, A. W., Dioxygen Activation by Sulfinic Acids: Direct Oxysulfonylation of Alkenes Leading to Secondary and Tertiary β-Hydroxysulfones. *Angew Chem Int Ed* **2013**, *52*, 7156

186) Meng, L. K.; Zhang, G. H.; Liu, C.; Wu, K.; Lei, A. W., Trifluoromethanesulfonic Acid Catalyzed Synergetic Oxidative/[3+2] Cyclization of Quinones with Olefins. *Angew Chem Int Edit* **2013**, *52*, 10195

187) Shi, R. Y.; Zhang, H.; Lu, L. J.; Chen, B. R.; Sha, Y. C.; Liu, C.; Lei, A. W., Palladium/Copper-Catalyzed Oxidative C-H Alkenylation/N-Dealkylative Carbonylation of Tertiary Anilines. *Angew Chem Int Edit* **2013**, *52*, 10582

188) Ozaki, K.; Zhang, H.; Ito, H.; Lei, A. W.; Itami, K., One-shot indole-to-carbazole π-extension by a Pd–Cu–Ag trimetallic system. *Chem Sci* **2013**, *4*, 3416

189) Zhu, L.M.; Lei, A. W.W.; Cao, Y.L.; Ai, X.P.; Yang, H.X., An all-organic rechargeable battery using bipolar polyparaphenylene as a redox-active cathode and anode. *Chem Commun* **2013**, *49*, 567

190) Liu, C.; Tang, S.; Lei, A. W., Oxidant Controlled Pd-Catalysed Selective Oxidation of Primary Alcohols. *Chem Commun* **2013**, *49*, 1324

191) Tang, S.; Liu, C.; Lei, A. W., Nickel-Catalysed Novel ß, γ-Unsaturated Nitrile Synthesis. *Chem Commun* **2013**, *49*, 2442

192) Meng, L. K.; Wu, K.; Liu, C.; Lei, A. W., Palladium-Catalysed Aerobic Oxidative Heck-type Alkenylation of Csp3-H for Pyrrole Synthesis. *Chem Commun* **2013**, *49*, 5853

193) Ke, J.; He, C.; Liu, H. Y.; Xu, H.; Lei, A. W., Alcohol Assisted C-C Bond Breaking: Copper-Catalyzed Deacetylative α-Arylation of β-keto Esters and Amides. *Chem Commun* **2013**, *49*, 6767

194) Ke, J.; He, C.; Liu, H. Y.; Li, M. J.; Lei, A. W., Oxidative Cross-Coupling/Cyclization to Build Polysubstituted Pyrroles from Terminal Alkynes and β-Enamino Esters. *Chem Commun* **2013**, *49*, 7549

195) Wang, L.; Liu, C.; Bai, R. P.; Pan, Y. N.; Lei, A. W., Easy Access to Enamides:

A Mild Nickel-Catalysed Alkene Isomerization of Allylamides. *Chem Commun* **2013**, *49*, 7923

196) Li, J.; Jin, L. Q.; Liu, C.; Lei, A. W., Quantitative Kinetic Investigation on Transmetalation of ArZnX in a Pd-Catalysed Oxidative Coupling. *Chem Commun* **2013**, *49*, 9615

197) Liu, C.; Liu, D.; Zhang, W.; Zhou, L. L.; Lei, A. W., Nickel-Catalyzed Aromatic C-H Alkylation with Secondary or Tertiary Alkyl-Br Bonds for the Construction of Indolones. *Org Lett*. **2013,** *15*, 6166

198) Liu, Q.; Yi, H.; Liu, J.; Yang, Y. H.; Zhang, X.; Zeng, Z. Q.; Lei, A. W., Visible Light Photocatalytic radical Alkenylation of α-Carbonyl Alkyl Bromides and Benzyl Bromides. *Chem Eur J* **2013**, *19*, 5120

199) Huang, Z. L.; Jin, L. Q.; Han, H. Y.; Lei, A. W., The "Kinetic Capture" of Acylium Ion from Live Aluminum Chloride Promoted Friedel-Crafts Acylation Reactions. *Org Biomol Chem* **2013**, *11*, 1810

200) Xi, Y. M.; Yi, H.; Lei, A. W., Synthetic Applications of Photoredox Catalysis with Visible Light. *Org Biomol Chem* **2013**, *11*, 2387

201) Wang, J.; Liu, C.; Yuan, J. W.; Lei, A. W., Transition-Metal-Free Aerobic Oxidation of Primary Alcohols to Carboxylic Acids. *New J Chem* **2013**, *37*, 1700

2012

202) Guo, M.; Dong, H.; Li, J.; Cheng, B.; Huang, Y. Q.; Feng, Y. Q.; Lei, A. W., Spectroscopic Observation of Iodosylarene Metalloporphyrin Adducts and Manganese(V)-Oxo Porphyrin Species in a Cytochrome P450 Analogue. *Nature communications* **2012**, *3*, 1190, DOI:10.1038/ncomms2196

203) He, C.; Guo, S.; Ke, J.; Hao, J.; Xu, H.; Chen, H. Y.; Lei, A. W., Silver-Mediated Oxidative C-H/C-H Functionalization: A Strategy To Construct Polysubstituted Furans. *J Am Chem Soc* **2012**, *134*, 5766

204) Zhang, H.; Shi, R. Y.; Ding, A. X.; Lu, L. J.; Chen, B. R.; Lei, A. W., Transition-metal-free Alkoxycarbonylation of Aryl Halides. *Angew Chem Int Edit* **2012**, *51*, 12542

205) Weng, Y.; Cheng, B.; He, C.; Lei, A. W., Rational Design of Pd-Catalyzed Csp-Csp Cross-Coupling Reaction Inspired by Kinetic Studies. *Angew Chem Int Edit* **2012**, *51*, 9547

206) Liu, C.; Tang, S.; Zheng, L.; Liu, D.; Zhang, H.; Lei, A. W., Covalently Bound Benzyl Ligand Promotes Selective Palladium-Catalyzed Oxidative Esterification of Aldehydes with Alcohols. *Angew Chem Int Edit* **2012**, *51*, 5662

207) Zhang, H.; Shi, R. Y.; Gan, P.; Liu, C.; Ding, A. X.; Wang, Q. Y.; Lei, A. W., Palladium-Catalyzed Oxidative Double C-H Functionalization/Carbonylation for the Synthesis of Xanthones. *Angew Chem Int Edit* **2012**, *51*, 5204

208) Liu, Q.; Wu, P.; Yang, Y. H.; Zeng, Z. Q.; Liu, J.; Yi, H.; Lei, A. W., Room-Temperature Copper-Catalyzed Oxidation of Electron-Deficient Arenes and Heteroarenes Using Air. *Angew Chem Int Edit* **2012**, *51*, 4666

209) Liu, C.; Tang, S.; Liu, D.; Yuan, J. W.; Zheng, L. W.; Meng, L. K; Lei, A. W., Nickel-Catalyzed Heck-Type Alkenylation of Secondary and Tertiary a-Carbonyl Alkyl Bromides. *Angew Chem Int Edit* **2012**, *51*, 3638

210) Liu, J.; Deng, Y.; Lin, C. T.; Lei, A. W. "Push effect" of sulfur coordination: promoting the breaking of C(sp(2))-I bond by pincer thioimido-Pd(II) complexes. *Chem Sci* **2012**, *3*, 1211

211) He, C.; Hao, J.; Xu, H.; Mo, Y.; Liu, H.; Han, J.; Lei, A. W., Heteroaromatic imidazo[1,2-a]pyridines synthesis from C-H/N-H oxidative cross-coupling/cyclization. *Chem Commun* **2012**, *48*, 11073

212) Liu, Q.; Zhao, Q. Y.; Liu, J.; Wu, P.; Yi, H.; Lei, A. W., A trans diacyloxylation of indoles. *Chem Commun* **2012**, *48*, 3239

213) Wang, H. B.; Wang, L.; Shang, J. S.; Li, X.; Wang, H. Y.; Gui, J.; Lei, A. W., Fe-catalysed oxidative C-H functionalization/C-S bond formation. *Chem Commun* **2012**, *48*, 76

214) Yi, H.; Liu, Q.; Liu, J.; Zeng, Z. Q.; Yang, Y. H.; Lei, A. W., DDQ Catalyzed Oxidative C-O Coupling of sp3 C-H Bonds with Carboxylic Acids. *ChemSusChem* **2012**, *5*, 2143

215) Qiu, C. B.; Jin, L. Q.; Huang, Z. L.; Tang, Z. Q.; Lei, A. W.; Shen, Z. L.; Sun, N.; Mo, W. M.; Hu, B. X.; Hu, X. Q., Symbiotic Catalysis Relay: Molecular Oxygen Activation Catalyzed by Multiple Small Molecules at Ambient Temperature and its Mechanism. *ChemCatChem* **2012**, *4*, 76

216) Chen, M.; Wang, J.; Chai, Z. Y.; You, C.; Lei, A. W., C-X (X=Br, I) Bond-Tolerant Aerobic Oxidative Cross- Coupling: A Strategy to Selectively Construct Aryl Ketones and Aldehydes. *Adv Synth Catal* **2012**, *354*, 341

217) Zhu, L. M.; Niu, Y. J.; Cao, Y. L.; Lei, A. W.; Ai, X. P.; Yang, H. X., n-Type redox behaviors of polybithiophene and its implications for anodic Li and Na storage materials. *Electrochim Acta* **2012**, *78*, 27

218) Jin, L. Q.; Lei, A. W., Insights into the elementary steps in Negishi coupling through kinetic investigations. *Org Biomol Chem* **2012**, *10*, 6817

219) Jin, L. Q.; Luo, X. C.; Lei, A. W., Pd/pi-Acidic Ligand Catalyzed ArI and Alkyl-In Cross-Coupling Reactions under Mild Conditions. *Acta Chim Sinica* (*Huaxue Xuebao*) **2012**, *70,* 1538

220) Jin, L. Q.; Lei, A. W. Mechanistic aspects of oxidation of palladium with O_2. *Science China Chemistry* **2012**, *55,* 2027

2011

221) Liu, C.; Zhang, H.; Shi, W.; Lei, A. W., Bond Formations between Two Nucleophiles: Transition Metal Catalyzed Oxidative Cross-Coupling Reactions. *Chem Rev* **2011**, *111*, 1780.

222) Shi, W.; Liu, C.; Lei, A. W., Transition-metal catalyzed oxidative cross-coupling reactions to form C-C bonds involving organometallic reagents as nucleophiles. *Chem Soc Rev* **2011**, *40*, 2761.

223) Liu, Q.; Zhang, H.; Lei, A. W., Oxidative Carbonylation Reactions: Organometallic Compounds (R-M) or Hydrocarbons (R-H) as Nucleophiles. *Angew Chem Int Edit* **2011**, *50*, 10788.

224) Liu, C.; Wang, J.; Meng, L. K.; Deng, Y.; Li, Y.; Lei, A. W., Palladium-Catalyzed Aerobic Oxidative Direct Esterification of Alcohols. *Angew Chem Int Edit* **2011**, *50*, 5144.

225) Liu, C.; Deng, Y.; Wang, J.; Yang, Y. Y.; Tang, S.; Lei, A. W., Palladium-Catalyzed C-C Bond Formation To Construct 1,4-Diketones under Mild Conditions. *Angew Chem Int Edit* **2011**, *50*, 7337.

226) Zhang, H.; Liu, D.; Chen, C. Y.; Liu, C.; Lei, A. W., Palladium-Catalyzed Regioselective Aerobic Oxidative C-H/N-H Carbonylation of Heteroarenes under Base-Free Conditions. *Chem-Eur J* **2011**, *17*, 9581.

227) Liu, W.; Cao, H.; Xin, J.; Jin, L. Q.; Lei, A. W., Cobalt-Catalyzed Direct Arylation of Unactivated Arenes with Aryl Halides. *Chem-Eur J* **2011**, *17*, 3588.

228) Liu, Q.; Li, G.; Yi, H.; Wu, P.; Liu, J.; Lei, A. W., Pd-Catalyzed Direct and Selective C-H Functionalization: C3-Acetoxylation of Indoles. *Chem-Eur J* **2011**, *17*, 2353.

229) Zhang, H.; Lei, A. W., Palladium (IV) chemistry supported by pincer type ligands. *Dalton T* **2011**, *40*, 8745.

230) Yang, Y. Y.; Tang, S.; Liu, C.; Zhang, H. M.; Sun, Z. X.; Lei, A. W., Novel alpha-arylnitriles synthesis via Ni-catalyzed cross-coupling of alpha-bromonitriles with arylboronic acids under mild conditions. *Org Biomol Chem* **2011**, *9*, 5343.

231) Huang, Z. L.; Jin, L. Q.; Lei, A. W., Development of Mechanism Studies and Kinetic Investigations in Friedel-Crafts Acylation. *Chin J Org Chem* **2011**, *31*, 775.

2010

232) Liu, W.; Cao, H.; Zhang, H.; Zhang, H.; Chung, K. H.; He, C. A.; Wang, H. B.; Kwong, F. Y.; Lei, A. W., Organocatalysis in Cross-Coupling: DMEDA-Catalyzed Direct C-H Arylation of Unactivated Benzene. *J Am Chem Soc* **2010**, *132*, 16737.

233) Hu, Y. H.; Liu, J.; Lu, Z. X.; Luo, X. C.; Zhang, H.; Lan, Y.; Lei, A. W., Base-Induced Mechanistic Variation in Palladium-Catalyzed Carbonylation of Aryl Iodides. *J Am Chem Soc* **2010**, *132*, 3153.

234) Jin, L. Q.; Xin, J.; Huang, Z. L.; He, J.; Lei, A. W., Transmetalation is the Rate-Limiting Step: Quantitative Kinetic Investigation of Nickel-Catalyzed Oxidative Coupling of Arylzinc Reagents. *J Am Chem Soc* **2010**, *132*, 9607.

235) He, C. A.; Guo, S.; Huang, L.; Lei, A. W., Copper Catalyzed Arylation/C-C Bond Activation: An Approach toward alpha-Aryl Ketones. *J Am Chem Soc* **2010**, *132*, 8273.

236) Chen, M.; Zheng, X. L.; Li, W. Q.; He, J.; Lei, A. W., Palladium-Catalyzed Aerobic Oxidative Cross-Coupling Reactions of Terminal Alkynes with Alkylzinc Reagents. *J Am Chem Soc* **2010**, *132*, 4101.

237) Liu, W.; Cao, H.; Lei, A. W., Iron-Catalyzed Direct Arylation of Unactivated Arenes with Aryl Halides. *Angew Chem Int Edit* **2010**, *49*, 2004.

238) Liu, Q.; Li, G.; He, J.; Liu, J.; Li, P.; Lei, A. W., Palladium-Catalyzed Aerobic Oxidative Carbonylation of Arylboronate Esters under Mild Conditions. *Angew Chem Int Edit* **2010**, *49*, 3371.

239) Duan, H.; Meng, L. K.; Bao, D. H.; Zhang, H.; Li, Y.; Lei, A. W., Zinc Chloride Enhanced Arylations of Secondary Benzyl Trifluoroacetates in the Presence of beta-Hydrogen Atoms. *Angew Chem Int Edit* **2010**, *49*, 6387.

240) Lei, A. W.; Liu, W.; Liu, C.; Chen, M., Arylation of unactivated arenes. *Dalton T* **2010**, *39*, 10352.

241) Liu, C.; Jin, L. Q.; Lei, A. W., Transition-Metal-Catalyzed Oxidative Cross-Coupling Reactions. *Synlett* **2010**, 2527.

242) Li, Q. A.; Wongkhan, K.; Luo, X. C.; Batsanov, A. S.; Howard, J. A. K.; Lan, Y.; Wu, Y. D.; Marder, T. B.; Lei, A. W., A novel self-promoted Morita-Baylis-Hillman-like dimerization. *Chinese Sci Bull* **2010**, *55*, 2794.

243) Chen, M.; Weng, Y.; Lei, A. W., Asymmetric Cycloisomerization of 1, n-Enynes Catalyzed by Transition Metals. *Prog Chem* **2010**, *22*, 1341.

2009

244) Liu, Q.; Lan, Y.; Liu, J.; Li, G.; Wu, Y. D.; Lei, A. W., 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.

245) Jin, L. Q.; Zhang, H.; Li, P.; Sowa, J. R.; Lei, A. W., What is the Rate of the Csp(2)-Csp(2) Reductive Elimination Step? Revealing an Unusually Fast Ni-Catalyzed Negishi-Type Oxidative Coupling Reaction. *J Am Chem Soc* **2009**, *131*, 9892.

246) Jin, L. Q.; Liu, C.; Liu, J.; Hu, F.; Lan, Y.; Batsanov, A. S.; Howard, J. A. K.; Marder, T. B.; Lei, A. W., Revelation of the Difference between Arylzinc Reagents Prepared from Aryl Grignard and Aryllithium Reagents Respectively: Kinetic and Structural Features. *J Am Chem Soc* **2009**, *131*, 16656.

247) Chen, J.; Zhang, W. C.; Geng, H. L.; Li, W.; Hou, G. H.; Lei, A. W.; Zhang, X. M., Efficient Synthesis of Chiral beta-Arylisopropylamines by Using Catalytic Asymmetric Hydrogenation. *Angew Chem Int Edit* **2009**, *48*, 800.

248) Zhang, H.; Luo, X. C.; Wongkhan, K.; Duan, H.; Li, Q.; Zhu, L. Z.; Wang, J.; Batsanov, A. S.; Howard, J. A. K.; Marder, T. B.; Lei, A. W., Acceleration of Reductive Elimination of [Ar-Pd-C-sp3] by a Phosphine/Electron-Deficient Olefin Ligand: A Kinetic Investigation. *Chem-Eur J* **2009**, *15*, 3823.

249) Liu, J.; Wang, H. B.; Zhang, H.; Wu, X. J.; Zhang, H.; Deng, Y.; Yang, Z.; Lei, A. W., Identification of a Highly Efficient Alkylated Pincer Thioimido-Palladium(II) Complex as the Active Catalyst in Negishi Coupling. *Chem-Eur J* **2009**, *15*, 4437.

250) Wang, H. B.; Liu, J.; Deng, Y.; Min, T. Y.; Yu, G. X.; Xu, X. J.; Yang, Z.; Lei, A. W., Pincer Thioamide and Pincer Thioimide Palladium Complexes Catalyze Highly Efficient Negishi Coupling of Primary and Secondary Alkyl Zinc Reagents at Room Temperature. *Chem-Eur J* **2009**, *15*, 1499.

251) Yin, W. Y.; He, C.; Chen, M.; Zhang, H.; Lei, A. W., Nickel-Catalyzed Oxidative Coupling Reactions of Two Different Terminal Alkynes Using O-2 as the Oxidant at Room Temperature: Facile Syntheses of Unsymmetric 1,3-Diynes. *Org Lett* **2009**, *11*, 709.

252) Jin, L. Q.; Zhao, Y. S.; Zhu, L. Z.; Zhang, H.; Lei, A. W., Highly Selective Palladium-Catalyzed Oxidative Csp(2)-Csp(3) Cross-Coupling of Arylzinc and Alkylindium Reagents through Double Transmetallation. *Adv Synth Catal* **2009**, *351*, 630.

253) Guo, Z. M.; Jin, Y.; Liang, T.; Liu, Y. F.; Xu, Q.; Liang, X. M.; Lei, A. W., Synthesis, chromatographic evaluation and hydrophilic interaction/reversed-phase mixed-mode behavior of a "Click beta-cyclodextrin" stationary phase. *J Chromatogr A* **2009**, *1216*, 257.

2008

254) Zhao, Y. S.; Jin, L. Q.; Li, P.; Lei, A. W., Palladium-catalyzed oxidative carbonylation of alkyl and aryl indium reagents with CO under mild conditions. *J Am Chem Soc* **2008**, *130*, 9429.

255) Shi, W.; Luo, Y. D.; Luo, X. C.; Chao, L.; Zhang, H.; Wang, J.; Lei, A. W., Investigation of an Efficient Palladium-Catalyzed C(sp)-C(sp) Cross-Coupling Reaction Using Phosphine-Olefin Ligand: Application and Mechanistic Aspects. *J Am Chem Soc* **2008**, *130*, 14713.

256) He, C.; Chen, C.; Cheng, J.; Liu, C.; Liu, W.; Li, Q.; Lei, A. W., Aryl halide tolerated electrophilic amination of arylboronic acids with N-chloroamides catalyzed by CuCl at room temperature. *Angew Chem Int Edit* **2008**, *47*, 6414.

257) Chen, M.; Weng, Y.; Guo, M.; Zhang, H.; Lei, A. W., Nickel-catalyzed reductive cyclization of unactivated 1,6-enynes in the presence of organozinc reagents. *Angew Chem Int Edit* **2008**, *47*, 2279.

258) Liu, J.; Deng, Y.; Wang, H. B.; Zhang, H.; Yu, G. X.; Wu, B. B.; Zhang, H.; Li, Q.; Marder, T. B.; Yang, Z.; Lei, A. W., Effective Pd-nanoparticle (PdNP)-catalyzed Negishi coupling involving alkylzinc reagents at room temperature. *Org Lett* **2008**, *10*, 2661.

259) Chen, J.; Liu, Q.; Zhang, W. C.; Spinella, S.; Lei, A. W.; Zhang, X. M., A convenient synthesis and the asymmetric hydrogenation of N-phthaloyl dehydroamino acid esters. *Org Lett* **2008**, *10*, 3033.

260) Liu, Q.; Duan, H.; Luo, X. C.; Tang, Y.; Li, G.; Huang, R.; Lei, A. W., 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.

261) Liu, W.; Lei, A. W., Efficient Fe-catalyzed homo-coupling of aryl Grignard reagents using O-2 as the oxidant. *Tetrahedron Lett* **2008**, *49*, 610.

262) Liu, J.; Liang, B.; Shu, D. X.; Hu, Y. H.; Yang, Z.; Lei, A. W., Alkoxycarbonylation of aryl iodides catalyzed by Pd with a thiourea type ligand under balloon pressure of CO. *Tetrahedron* **2008**, *64*, 9581.

263) Jin, L. Q.; Zhao, Y. S.; Wang, H. B.; Lei, A. W., Palladium-catalyzed R(sp(3))-Zn/R(sp)-SnBu3 oxidative cross-coupling. *Synthesis* **2008**, 649

264) Guo, Z. M.; Liu, Y. F.; Xu, J. Y.; Xu, Q.; Xue, X. Y.; Zhang, F. F.; Ke, Y. X.; Liang, X. M.; Lei, A. W., Novel reversed-phase high-performance liquid chromatography stationary phase with oligo(ethylene glycol) "click" to silica. *J Chromatogr A* **2008**, *1191*, 78.

265) Zhang, Y. P.; Guo, Z. M.; Ye, J. X.; Xu, Q.; Liang, X. M.; Lei, A. W., Preparation of novel beta-cyclodextrin chiral stationary phase based on click chemistry. *J Chromatogr A* **2008**, *1191*, 188.

2007

266) Shi, W.; Liu, C.; Yu, Z.; Lei, A. W., Alkynylation of alpha-halocarbonyl compounds - a Stille-type cross-coupling for the formation of C(sp)-C(sp(3)) bonds under neutral conditions. *Chem Commun* **2007**, 2342.

267) Guo, Z. M.; Lei, A. W.; Zhang, Y. P.; Xu, Q.; Xue, X. Y.; Zhang, F. F.; Liang, X. M., "Click saccharides": novel separation materials for hydrophilic interaction liquid chromatography. *Chem Commun* **2007**, 2491.

268) Luo, X. C.; Zhang, H.; Duan, H.; Liu, O.; Zhu, W.; Zhang, T.; Lei, A. W., Superior effect of a pi-acceptor ligand (Phosphine-Electron-Deficient olefin ligand) in the Negishi coupling involving alkylzinc reagents. *Org Lett* **2007**, *9*, 4571.

269) Liu, C.; He, C.; Shi, W.; Chen, M.; Lei, A. W., Ni-catalyzed mild arylation of alpha-halocarbonyl compounds with arylboronic acids. *Org Lett* **2007**, *9*, 5601.

270) Liu, F.; Liu, Q.; He, M. S.; Zhang, X. M.; Lei, A. W., Rh-catalyzed highly enantioselective formation of functionalized cyclopentanes and cyclopentanones. *Org Biomol Chem* **2007**, *5*, 3531.

271) Deng, L. J.; Liu, J.; Huang, J. Q.; Hu, Y. H.; Chen, M.; Lan, Y.; Chen, J. H.; Lei, A. W.; Yang, Z., Effect of lithium chloride on tuning the reactivity of Pauson-Khand reactions catalyzed by palladium-tetramethylthiourea. *Synthesis* **2007**, 2565.

2006

272) Zhao, Y. S.; Wang, H. B.; Hou, X. H.; Hu, Y. H.; Lei, A. W.; Zhang, H.; Zhu, L. Z., Oxidative cross-coupling through double transmetallation: Surprisingly high selectivity for palladium-catalyzed cross-coupling of alkylzinc and alkynylstannanes. *J Am Chem Soc* **2006**, *128*, 15048.

273) Guo, Z. M.; Lei, A. W.; Liang, X. M.; Xu, Q., Click chemistry: a new facile and efficient strategy for preparation of functionalized HPLC packings. *Chem Commun* **2006**, 4512.

274) Lei, A. W.; Chen, M.; He, M. S.; Zhang, X. M., Asymmetric hydrogenation of pyridines: Enantioselective synthesis of nipecotic acid derivatives. *Eur J Org Chem* **2006**, 4343.

Book Chapters

1) Lei, A. W.; Jin, L. Q. *Case Study of Mechanisms in Synthetic Reactions* in *Organic Chemistry – Breakthroughs and Perspectives,* eds. Ding, K. L.; Dai, L.X. Wiley-VCH, Weinheim, **2012**, August
2) Lei, A. W.; Zhang, H. *Transition Metal-Catalysed Direct Arylation of Unactivated Arenes with Aryl Halides* in *C-H and C-X Bond Functionalization: Transition Metal Mediation,Ed.* Ribas, X. RSC, **2013**
3) He, C.; Lei, A. W. *Application of Nontoxic Iron Salts in Oxidative C-C Coupling Reactions* in *Comprehensive Inorganic Chemistry II*, eds. Reedijk, J. and Poeppelmeier, K., Vol 6. Oxford: Elsevier; **2013**. p. 521-547.
4) Lei, A. W.W.; Liu, W. *Directed Aryl C-H Oxidations with Transition Metals*. In: Molander and Paul Knochel (eds.), *Comprehensive Organic Synthesis*, 2nd edition, Vol 7, Oxford: Elsevier; 2014. PP. 313-346
5) Lei, A. Shi, W. Liu, C. Liu, W. Zhang, H. He, C. Oxidative Cross-Coupling Reactions. Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, Germany. doi: 10.1002/9783527680986.

Publications before independent research

1) Collman, J. P.; Zeng, L.; Wang, H. J. H.; Lei, A. W.; Brauman, J. I. *Eur. J. Org. Chem.* **2006**, 2707.
2) Shen, Z. M.; Lu, X. Y.; Lei, A. W. *Tetrahedron* **2006**, *62*, 9237.
3) He, M.; Lei, A. W.; Zhang, X. M. *Tetrahedron Lett.* **2005**, *46*, 1823.
4) Lei, A. W.; Lu, X. Y.; Liu, G. S. *Tetrahedron Lett.* **2004**, *45*, 1785.
5) Lei, A. W.; Wu, S. L.; He, M. S.; Zhang, X. M. *J. Am. Chem. Soc.* **2004**, *126*, 1626.
6) Lei, A. W.; He, M. S.; Zhang, X. M. *J. Am. Chem. Soc.* **2003**, *125*, 11472.
7) Lei, A. W.; He, M. S.; Wu, S. L.; Zhang, X. M. *Angew. Chem. Int. Ed.* **2002**, *41*, 3457.
8) Lei, A. W.; Waldkirch, J. P.; He, M. S.; Zhang, X. M. *Angew. Chem., Int. Ed.* **2002**, *41*, 4526.
9) Lei, A. W.; Liu, G. S.; Lu, X. Y. *J. Org. Chem.* **2002**, *67*, 974.
10) Lei, A. W.; Srivastava, M.; Zhang, X. M. *J. Org. Chem.* **2002**, *67*, 1969.
11) Lei, A. W.; He, M. S.; Zhang, X. M. *J. Am. Chem. Soc.* **2002**, *124*, 8198.
12) Lei, A. W.; Zhang, X. M. *Org. Lett.* **2002**, *4*, 2285.
13) Lei, A. W.; Zhang, X. M. *Tetrahedron Lett.* **2002**, *43*, 2525.
14) Lei, A. W.; Lu, X. Y. *Org. Lett.* **2000**, *2*, 2699.
15) Wang, Z.; Lu, X. Y.; Lei, A. W.; Zhang, Z. G. *J. Org. Chem.* **1998**, *63*, 3806.

Invited Lectures

1) 14th National Conference on Organometallic Chemistry, Suzhou, 2006, 10, 23
2) Hong Kong University of Science and Technology, Hong Kong, 2007, 2, 1
3) ACS National Meeting for Chicago, 2007, 3, 29
4) Merck, US, 2007, 3, 30
5) ACS Meeting, India, 2007, 4, 13
6) WuXi AppTec, Shanghai, 2007, 8, 17
7) 3rd Asian Symposium on Advanced Organic Synthesis, Kyoto, 2007, 11, 8
8) 7th Tateshina Conference on Organic Chemistry, Tateshina, Japan, 2007, 11, 9
9) Shenzhen, 2007, 12, 12
10) 2007 International Symposium on Catalysis and Fine Chemicals, Singapore, 2007, 12, 17
11) University of Illinois, US, 2008, 5, 14
12) Middle Atlantic Regional Meeting, New York, 2008, 5, 17
13) MIT, US, 2008, 5, 21
14) 3rd International Conference on Cutting-Edge Organic Chemistry in Asia, Hangzhou, 2008, 10, 19

15) 15th National Conference on Organometallic Chemistry, Nanjing, 2008, 10, 23
16) RSC, UK, 2008, 10, 26
17) 6th Jianghuai symposium on organic chemistry, Huaibei, 2008, 11, 8
18) Nankai University, Tianjin, 2008, 12, 5
19) Keda, 2009, 6, 2
20) The 5th SINO-US Symposium on Organic Chemistry, Lanzhou, 2009, 6, 30
21) 8th Mainland-Taiwan conference on catalysis, Lanzhou, 2009, 8, 10
22) 1st Wuhan-Hefei-Nanjing symposium of organic chemistry, Wuhan, 2009, 8, 16
23) 6th National Conference on Organic Chemistry, Xi'an, 2009, 8, 19
24) Chengdu, 2009, 9, 9
25) University of Valloliode, Spain, 2009, 9, 22
26) Durham University, UK, 2009, 9, 24
27) York University, UK, 2009, 9, 25
28) Leibniz-Institut für Katalyse, German, 2009, 9, 28
29) Lonza Company, Switzerland, 2009, 9, 30
30) Renns University, France, 2009, 10, 5
31) LMU Munich, German, 2009, 10, 7
32) 5th Sino-Japanese Symposium on Organic Chemistry for Young Scientists, Chengdu, 2009, 10, 10
33) 11th National Conference on Homogeneous Coordination Catalysis, Changsha, 2009, 10, 17
34) 2nd Asian Conference on Coordination Chemistry, Nanjing, 2009, 11, 2
35) West Virginal University, USA, 2009, 11, 11
36) GSK, USA, 2009, 11, 17
37) Lonza, Guangzhou, 2009, 12, 9
38) Shanghai Institute of Organic Chemistry, CAS, Shanghai, 2009, 12, 14
39) Huazhong University of Science and Technology, Wuhan, 2010, 5, 12
40) Hunan Normal University, Changcha, 2010, 5, 17
41) 6th Sino-US Conference of Chemistry Professors, Hangzhou, 2010, 6, 15
42) 11th Tetrahedron Symposia, Beijing, 2010, 6, 22
43) 2010 Organometallic Chemistry Gordon Research Conference, US, 2010, 7, 11
44) Lanzhou Institute of Chemical Physics, CAS, Lanzhou, 2010, 7, 26
45) 3rd Sino-German Frontiers of Chemistry Symposium, Kloster Seeon, Germany, 2010, 8, 14
46) Dalton Discussion 12: catalytic C-H and C-X bond activation, Keynote Leuture, Durham University, UK, 2010, 9, 13
47) University of Liverpool, Liverpool, UK, 2010, 9, 16
48) Sino-Japan, Tianjin, 2010,9,26
49) 4th International Forum on Homogeneous Catalysis and The First China-Canada Bilateral Symposium on Catalysis, Kunming, 2010,10,8

50) 2nd International Symposium on Organic Synthesis and Drug Development, Nanjing, 2010, 10, 16
51) 6th Bilateral Sino-Australia Organic Chemistry Symposium, Huangshan, 2010,10,19
52) 16th National Conference on Organometallic Chemistry, Wenzhou 2010, 10, 23
53) 11th International Symposium for Chinese Organic Chemists and 8th International Symposium for Chinese Inorganic Chemists, Taipei, 2010, 10, 25
54) East China Normal University, Shanghai, 2010, 11, 8
55) Shanghai University, Shanghai, 2010, 11, 8
56) Paris, France 2010,11,15
57) Lausanne 2010,11,23
58) Marseille, France 2010,11,25
59) Guangzhou, 2010,11,30
60) Mini-Symposium of Catalysis in Wuhan University, Wuhan, 2011, 1, 23
61) Shenzhen Graduate School of Peking University, Shenzhen, 2011, 4, 21
62) Hubei University, Wuhan, 2011, 4, 27
63) Jiangxi Normal University, Nanchang, 2011, 5, 3
64) BASF, New Jersey, 2011, 5, 9
65) Rutgers University, Rutgers, 2011, 5, 13
66) Argonne National Laboratory, 2011, 5, 17
67) Peking University, Beijing, 2011, 5, 27
68) School of Pharmaceutical Sciences, Wuhan University, Wuhan, 2011, 6, 7
69) Eli Lilly and Company, Shanghai, 2011, 6, 13
70) King Abdullah University of Science and Technology (KAUST), Saudi Arabia, 2011, 6, 25
71) 7th Sino-US Sino-US Conference of Chemistry Professors, Guiyang, 2011, 6, 30
72) BIT's 2nd Annual World Congress of Catalytic Asymmetric Synthesis, Beijing, 2011, 8, 9
73) Lanzhou Institute of Chemical Physics, Lanzhou, 2011, 8, 12
74) 1st Symposium on "New Frontiers in Organic Chemistry：Towards Cleaner, Greener Chemical Processes", Beijing, 2011, 9, 4
75) IME Boron XIV Conference, Canada, 2011, 9, 13
76) 12th National Conference of Homogeneous Catalysis, Chengdu, 2011, 10, 10
77) Zhejiang University of Technology, 2011, 10, 18,
78) The 7th National Conference of Organic Chemistry, Nanjing, 2011, 11, 13
79) 2nd International Conference on Green & Sustainable Chemistry, Singapore, 2011, 11, 15
80) South-Central University for Nationalities, Wuhan, 2011, 11, 24
81) The 9th National Conference on Physical Organic Chemistry, Shenzhen, 2011, 12, 3
82) 6th International Conference on Cutting-Edge Organic Chemistry in Asia (ICCEOCA-6), Asian Core Program (ACP), Hongkong, 2011, 12, 14

83) Jiangxi Normal University, Nanchang, 2011, 12, 20
84) Institute of Chemistry, CAS, Beijing, 2011, 12, 23
85) Technical Institute of Physics and Chemistry, CAS, 2011, 12, 23
86) Zhejiang University, 2012, 12, 27
87) Fujian Institute of Research on the Structure of Matter, 2011, 12, 28
88) 8th CRC International Symposium on Organometallics & Catalysis, Toronto, 2012, 2, 4
89) JSPS lecture, Nagoya University, Nagoya, 2012, 3, 2
90) JSPS lecture, Gakushuin University, Tokyo, 2012, 3, 5
91) JSPS lecture, Tokyo University of Science, Tokyo, 2012, 3, 6
92) JSPS lecture, Tokyo University, Tokyo, 2012, 3, 8
93) JSPS lecture, Riken, Tokyo, 2012, 3, 9
94) JSPS lecture, Kyoto University (Katsura Campus), Kyoto, 2012, 3, 12
95) JSPS lecture, Kyoto University (Uji Campus), Kyoto, 2012, 3, 13
96) JSPS lecture, Osaka University, Osaka, 2012, 3, 15
97) JSPS lecture, Okayama University, Okayama, 2012, 3, 16
98) JSPS lecture, Institute of olecular Science, Nagoya, 2012, 3, 19
99) University of California, Riverside, 2012, 4, 20
100) Eli Lilly, Indiana, 2012, 5, 15
101) East China Normal University, Shanghai, 2012, 6, 22
102) Renns University, France, 2012, 6, 29
103) 15th International Congress on Catalysis, Munich, Germany, 2012, 7, 4
104) 10th National Conference on Organic Synthetic Chemistry, Changchun, 2012, 8, 2
105) Nanjing University, Nanjing, 2012, 9, 22
106) Nanjing Normal University, Nanjing, 2012, 9, 23
107) Jiangxi Normal University, Nanchang, 2012, 11, 13
108) Northwest A&F university, Xi'an, 2012, 11, 27
109) Northwest University, Xi'an, 2012, 11, 28
110) Shaanxi Normal University, Xi'an, 2012, 11, 28
111) Fourth Military Medical University, Xi'an, 2012, 11, 29
112) Hunan University, Changsha, 2012, 12, 1
113) Institute of Chemical Research of Catalonia, Spain, 2012, 12, 17
114) Leibniz-Institut für Katalyse, German, 2012, 12, 19
115) National University of Singapore, Singapore, 2013, 2, 21
116) Nanyang Technological University, Singapore, 2013, 2, 22
117) Central South University, Changsha, 2013, 3, 11
118) Mettler Toledo, Shanghai, 2013, 3, 13
119) Mettler Toledo, Beijing, 2013, 3, 15
120) Lanzhou Institute of Chemical Physics, Lanzhou, 2013, 3, 16
121) Hong Kong Polytechnic University, Hong Kong, 2013, 4, 29

122) City University of Hong Kong, Hong Kong, 2013, 4, 30
123) University of Hong Kong, Hong Kong, 2013, 5, 2
124) Northeastern Normal University, Jilin, 2013, 5, 30
125) South China University of Technology, Guangzhou, 2013, 6, 5
126) Henan Normal University, Xinxiang, 2013, 6, 13
127) The 9th Sino-US Chemistry Professors Conference, Chengdu, 2013, 7, 12
128) The 7th China-Korea Symposium on Organic Chemistry, Xi'an, 2013, 7, 15
129) OMCOS 17, Fort Collins, 2013, 8, 1
130) The 15th Asian Chemical Congress, Singapore, 2013, 8, 21
131) 2nd Canada-China Workshop on Green Chemistry and Catalysis, Canada, 2013, 9, 6
132) The 10th National Conference on Physical Organic Chemistry, Hefei, 2013, 9, 14
133) The 13th National Conference on Homogeneous catalysis, 2013, 9, 26
134) Beijing Symposium 2013 on "New Frontiers in Organic Chemistry: New Reagents, New Reactions", Beijing, 2013, 10,10
135) The 8th National Organic Chemistry Conference, Chongqing, 2013, 10, 18
136) Illinois Institute of Technology, Chicago, 2013, 11, 4
137) The 11th Jianghuai Symposium on Organic Chemistry, Huaibei, 2013, 11, 10
138) Tsing Hua University, Beijing, 2013, 11, 15
139) Xiamen University, Xiamen, 2013, 11, 21
140) Nanjing University of Aeronautics and Astronautics, Nanjing, 2013, 11, 22
141) University of Heidelberg, 2013.11.27
142) BASF, Ludwigshafen, 2013.11.28
143) University of Aachen, Aachen, 2013. 11. 29
144) University of Münster, Münster, 2013. 12. 1
145) University of Göttingen, Göttingen, 2013. 12 .2
146) Leibniz-Institut für Katalyse, Rostock,2013.12.10
147) University of Münster, Münster, 2013. 12. 13
148) Leshan Normal University, Leshan, 2013.12.20
149) Nanchang University, Nanchang, 2014, 1, 3
150) National Chung Hsing University, Taichung, 2014, 2, 11
151) National Tsing Hua University, Hsinchu, 2014, 2, 12
152) National Taiwan University, 2014, 2, 14
153) Jiangxi Normal University, Nanchang, 2014, 2, 27
154) Nanchang University, Nanchang, 2014, 2, 28
155) 247 ACS meeting, 2014, 3, 18
156) National Chiao Tung University, Hsinchu, 2014, 5, 15
157) International Conference on Catalysis, Beijing, 2014, 6, 13
158) EuCheMS Conference on Organic Free Radicals, Prague, 2014, 6, 29
159) 2nd International Symposium on C-H bond activation, Rennes, France, 2014.7.2

160) 26th International Conference on Organometallic Chemistry (ICOMC2014), Sapporo，Japan，2014, 7, 17
161) 41st International Conference on Coordination Chemistry, Singapore, 2014, 7, 21
162) 29th Chinses Chemical Society National Meeting, Beijing, 2014, 8, 4
163) International Conference on Physical Organic Chemistry，Ottawa，Canada, 2014.8.11
164) 18th national Conference on Organometallic Chemistry, Lanzhou, 2014, 8, 19
165) 8th Asian-European Symposium on Metal-Mediated Efficient Organic Synthesis, Turkey, 2014, 9, 7
166) 2nd International Conference on Global Trends in Chemical Sciences, Hong Kong, 2014, 10, 3
167) 13th International Symposium for Chinese Organic Chemists (ISCOC) and 10th International Symposium for Chinese Inorganic Chemists (ISCIC), Xiamen, 2014, 12, 19
168) ACS Meeting, Japan, 2014, 10, 24
169) University of Incheon, Korea, 2014, 11, 26
170) ISCCHM-KAUST International Symposium, Saudi Arabia, 2015, 02, 01
171) ACS Meeting, Japan, 2015, 02, 23
172) the 5th China & Japan Young Chemists Forum, Japan, 2015, 03, 26
173) Lanzhou Institute of Chemical Physics, Lanzhou, 2015, 05, 22
174) 12th International Symposium “Activation of Dioxygen and Homogeneous Oxidation Catalysis” (ADHOC 2015), Wisconsin, USA, 2015
175) 9th Chinese Chemical Society - Inorganic Chemistry Symposium, Nanchang University, 2015, 07, 25
176) 9th Chinese Chemical Society - Organic Chemistry Symposium, Jilin, 2015, 07, 28
177) 2015 IUPAC 48th General Assembly and 45th World Chemistry Congress (IUPAC-2015), Korea, 2015, 08, 11
178) 21st Users' Meeting & Workshops, National Synchrotron Radiation Research Center, Taiwan, 2015, 09, 18
179) 11th Chinese Chemical Society – Physical Organic Chemistry Symposium, 2015, 09, 17
180) 14th National Homogenous Catalysis Colloquium, Dalian, 2015, 09, 26
181) 12th Chinese Chemical Society – National Synthetic Organic Chemistry Symposium, Guilin, 2015, 10, 15
182) 3rd Roche and RSC Chemistry Symposium on Leading Science for Drug Discovery, Shanghai, 2015, 10, 23
183) The 4th Editorial board meeting of Chines Chemical Letters, 2016, 1, 23
184) Sciences Chimiques de Rennes, France, 2016, 2, 20
185) Heidelberg University, Germany, 2016, 2, 21

186) University of Grenoble Alpes, France, 2016, 2, 28
187) University of Toulouse, France, 2016, 3, 1
188) Asia Communications and Photonics Conference, Korean, 2016, 5, 16
189) the 16th International Congress on Catalysis, Lanzhou, 2016, 6, 30
190) 30th Chinses Chemical Society National Meeting, 2016, 7, 1
191) 252nd American Chemical Society National Meeting & Exposition, Philadelphia, USA, 2016, 8, 21
192) the 3rd International Conference on Organometallics and Catalysis 2016,Korean, 2016, 8, 28