Seung Hwan Cho

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EDUCATION

Ph. D. in Organic Chemistry, KAIST 2006 – 2011

B. S. in Chemistry, KAIST 2001– 2005

PROFESSIONAL EXPERIENCE

Department of Chemistry, POSTECH 2018.09 – present
Associate Professor

Department of Chemistry, POSTECH 2014.07 – 2018.08
Assistant Professor

Department of Chemistry, University of California, Berkeley 2012 – 2014
Postdoctoral Fellow (with Professor John F. Hartwig)

Department of Chemistry, KAIST 2011 – 2012
Postdoctoral Fellow (with Professor Sukbok Chang)

Department of Chemistry, KAIST 2005 – 2006
Researcher (with Professor Sukbok Chang)

AWARDS AND HONORS

"Asian Core Program Lectureship Award" 2017-2019
Singapore, Japan, and Mainland China, Hong Kong, Taiwan

"Selected One of Outstanding Young Scientists in Korea"

POSTECH,

36. Lee, H.; Lee. Y.; **Cho, S. H.*** "Palladium-Catalyzed Chemoselective Negishi Cross-Coupling of Bis[(pinacolato)boryl]methtyl Zinc Halides with Aryl (Pseudo)Halides" Org. Lett. **2019**, 21, 5912.

35. Kim, J.; **Cho, S. H.*** "Access to Enantioenriched Benzylic 1,1-Silylboronate Esters by Palladium-Catalyzed Enantiotopic Group Selective Suzuki-Miyaura Coupling of (Diborylmethyl)silanes with Aryl Iodides" ACS Catal. **2019**, 9, 230.

34. Lee, Y.; Park, J.; **Cho, S. H.*** "Generation and Application of (Diborylmethyl)zinc Halide: Synthesis of Enantioenriched gem-Diborylalkanes by an Asymmetric Allylic Substitution Reaction" Angew. Chem, Int. Ed. **2018**, 57, 12930.

33. Singh, A.; Kim, M.-G.; Lee, H.-J.; Singh, R.; Cho, S. H.; Kim. D.-P. "Direct aryl-aryl coupling without pre-functionalization enabled by excessive oxidation of two-electron Ag(I)/Ag(III) catalyst" Adv. Synth. Catal. **2018**, 360, 2032.

32. Park, J.; Choi, S.; Lee, Y.; **Cho, S. H.*** "Chemo- and Stereoselective Crotylation of Aldehydes and Cyclic Aldimines with Allylic gem-Diboroante Ester" Org. Lett. **2017**, 19, 4054.

31. Kim, J; Ko, K.; **Cho, S. H.*** "Diastereo- and Enantioselective Synthesis of β-Aminoboronate Esters by Copper(I)-Catalyzed 1,2-Addition of 1,1-Bis[(pinacolato)boryl]alkanes to Imines" Angew. Chem, Int. Ed. **2017**, 56, 11584.

30. Hwang, C.; Jo, W.; **Cho, S. H.*** "Base-Promoted, Deborylative Secondary Alkylation of N-Heteroaromatic N-Oxides with Internal gem-Bis[(pinacolato)boryl]alkanes: A Facile Derivatization of 2,2′-Bipyridyl Analogues" Chem. Commun. **2017**, 53, 7573.

29. Lee, Y.; Park, J.; Baek, S.-Y.; Kim, S. T.; Tussupbayev, S.; Kim, J.; Baik, M.-H.*; **Cho, S. H.*** "Chemoselective Coupling of 1,1-Bis[(pinacolato)boryl]alkanes for the Transition-Metal-Free Borylation of Aryl and Vinyl Halides: A Combined Experimental and Theoretical Investigation" J. Am. Chem. Soc. **2017**, 139, 976.

28. Kim, J.; Kumar, A.; Lee, S. J.; Kim, J.; Lee, D.-G.; Kwon, T.; **Cho, S. H.**; Lee, I.* "Concave Silica Nanosphere with a Functionalized Open-Mouthed Cavity as Highly Active and Durable Catalytic Nanoreactor" Chem. Mater. **2017**, 29, 7785.

27. Kim, D.; Choi, J. K.; Kim, S. M.; Hwang, I.; Kii, J.; Choi, S.; **Cho, S. H.**; Kim, K.*; Lee, I. S.* "Confined Nucleation and Growth of PdO Nanocrystals in a Seed-Free Solution inside Hollow Nanoreactor" ACS Appl. Mater. Interfaces **2017**, 9, 29992.

26. Cho, Y. S.; Kim, S. M.; Ju, Y.; Kim, J.; Jeon, K.-W.; **Cho, S. H.**; Kim, J.; Lee, I. S.* "Spontaneous Pt Deposition on Defective Surfaces of In_2O_3 Nanocrystals Confined within Cavities of Hollow Silica Nanoshells: Pt Catalyst-Modified ITO Electrode with Enhanced ECL Performance" ACS Appl. Mater. Interfaces **2017**, 9, 20728.

25. Kim, J.; **Cho, S. H.*** "Recent Developments in the Direct Methylation of Electron Deficient N-Heteroarenes", Synlett, **2016**, 27, 2525. (Invited Synpact article)

24. Jo, W.; Kim, J.; Choi, S.; **Cho, S. H.*** "Transition-Metal Free Regioselective Alkylation of Heterocyclic N-Oxides Using 1,1-Diborylalkanes as Alkylation Reagents", Angew. Chem, Int. Ed. **2016**, 55, 9690.

23. Park, J.; Lee, Y.; Kim, J.; **Cho, S. H.*** "Copper-catalyzed Diastereoselective Addition of Diborylmethane to N-tert-Butansulfinyl Aldimines: Synthesis of β-Aminoboronates" Org. Lett., **2016**, 18, 1210.

22. Kim, J.; Park, S.; Park, J.; **Cho, S. H.*** "Synthesis of Alkylboronates by Copper-catalyzed Allylic Substitution of Allylic Chlorides with 1,1-Diborylalkanes" Angew. Chem, Int. Ed. **2016**, 55, 1498.

21. Larsen, M.; **Cho, S. H.**; Hartwig, J. F. "Iridium-Catalyzed, Hydrosilyl-Directed Borylation of Unactivated Alkyl C-H Bonds" J. Am. Chem. Soc. **2016**, 138, 762.

BEFORE POSTECH

20. **Cho, S. H.**; Hartwig, J. F.* "Iridium-catalyzed Bisborylation Reaction for the Synthesis of 1,1-Benzyldiboronate Esters" Chem. Sci. **2014**, 5, 694.

19. **Cho, S. H.**; Hartwig, J. F.* "Iridium-catalyzed Borylation of Secondary Benzylic C-H Bonds Directed by Hydrosilane" J. Am. Chem. Soc. **2013**, 135, 8157.

18. Kim, J. Y.; Park, S.; Ryu, J.; **Cho, S. H.**; Kim, S. H.; Chang, S.* "Rhodium-Catalyzed Intermolecular Amidation of Arenes with Sulfonyl Azides via Chelation-Assisted C-H bond" J. Am. Chem. Soc. **2012**, 134, 9110.

17. Ryu, J.; **Cho, S. H.***; Chang, S.* "A Versatile Rh(I) Catalyst System Enabling the Addition of Heteroarenes to both Alkenes and Alkynes via C-H Bond Activation Pathway", Angew. Chem., Int. Ed. **2012**, 51, 3677. (***Co-corresponding authors**)

16. Kim, H. J.; **Cho, S. H.**; Chang, S.* "A Intramolecular Oxidative Diamination and Aminohydroxylation of Olefins under Metal-Free Conditions" Org. Lett. **2012**, 14, 1424.

15. Kim, H. J.; Kim, J.; **Cho, S. H.***; Chang, S.*, "Intermolecular Oxidative C N Bond Formation under Metal-Free Conditions: Control of Chemoselectivity between Aryl sp^2 and Benzylic sp^3 C H Bond Imidation" J. Am. Chem. Soc. **2011**, 133, 16382. (***Co-corresponding authors**)

14. **Cho, S. H.**; J. Y. Kim, J. Kwak, Chang, S.* "Recent Advances in the Transition Metal-Catalyzed Twofold Oxidative C–H Bond Activation Strategy for C–C and C–N Bond Formation" Chem. Soc. Rev. **2011**, 40, 5068.

13. **Cho, S. H.**; Yoon, J.; Chang, S.* "Intramolecular Oxidative C-N Bond Forming Reaction for the Synthesis of Carbazoles: Comparison of Reactivity between the Cu-Catalyzed and Metal-Free Conditions" J. Am. Chem. Soc. **2011**, 133, 5996.

12. Kim, J. Y.; **Cho, S. H.**; Joseph, J.; Chang, S.* "Cobalt- and Manganese-Catalyzed Direct Amination of Azoles under Highly Mild Conditions" Angew. Chem., Int. Ed. **2010**, 49, 9899.

11. **Cho, S. H.**; Kim, J. Y.; Lee, S. Y.; Chang. S.* "Silver-Mediated Direct Amination of Benzoxazoles: Tuning the Amino Group Source from Formamides to Parents Amines" Angew. Chem., Int. Ed. **2009**, 48, 9127.

10. Hwang, S. J.; **Cho, S. H.**; Chang, S.* "Synthesis of Condensed Pyrroloindoles via Pd-Catalyzed Intramolecular C–H Bond Functionalization of Pyrroles" J. Am. Chem. Soc. **2008**, 130, 16158.

9. **Cho, S. H.**; Hwang, S. J.; Chang, S.* "Palladium-Catalyzed C–H Functionalization of Pyridine N-Oxides: Highly Selective Alkenylation and Direct Arylation with Unactivated Arenes" J. Am. Chem. Soc. **2008**, 130, 9254.

8. Lee, J. M.; Park, E. J; **Cho, S. H.**; Chang, S.* "Cu-Facilitated C–O Bond Formation Using N-Hydroxyphthalimide: Efficient and Selective Functionalization of Benzyl- and Allylic C H Bonds", J. Am. Chem. Soc. **2008**, 130, 7824.

7. Hwang, S. J.; **Cho, S. H.**; Chang, S.*

2. Chang, S.; **Cho,S. H.** "Preparation process of N-sulfonyl iminium heterocycle and bezocycle derivatives using copper catalyst" (Korea Patent 10-2008-0008002)

1. Chang, S.; **Cho,S. H.**; Kim, J. Y. "Process for the preparation of 2-amino benzazoles using oxidant and acid" (Korea Patent 10-2009-0086513)