

ASAP

Gallego, D.; Brück, A.; Irran, E.; Meier, F.; Kaupp, M.; Driess, M.; Hartwig, J.F. "From Bis(silylene) and Bis(germylene) Pincer-Type Nickel(II) Complexes to Isolable Intermediates of the Nickel-Catalyzed Sonogashira Cross-Coupling Reaction; *J. Am. Chem. Soc.* **2013**, *135*, ASAP. [\[doi\]](#)

2013

Hanley, P.S.; Hartwig, J.H. "Migratory Insertion of Alkenes into Metal–Oxygen and Metal–Nitrogen Bonds" *Angew. Chem. Int. Ed.* **2013**, *52*, 8510–8525. [\[doi\]](#)

Strom, A.E.; Hartwig, J.H. "One-Pot Anti-Markovnikov Hydroamination of Unactivated Alkenes by Hydrozirconation and Amination" *J. Org. Chem.* **2013**, *78*, 8909–8914. [\[doi\]](#)

Cheng, C.; Simmons, E.M.; Hartwig, J.H. "Iridium-Catalyzed, Diastereoselective Dehydrogenative Silylation of Terminal Alkenes with (TMSO)₂MeSiH" *Angew. Chem. Int. Ed.* **2013**, *52*, 8984–8989. [\[doi\]](#)

Liskey, C.W.; Hartwig, J.F. "Borylation of Arenes with Bis(hexylene glycolato)diboron; *Synthesis* **2013**, *45*, 1837–1842. [\[doi\]](#)

Sevov, C.S.; Hartwig, J.F. "Iridium-Catalyzed, Intermolecular Hydroetherification of Unactivated Aliphatic Alkenes with Phenols; *J. Am. Chem. Soc.* **2013**, *135*, 9303–9306. [\[doi\]](#)

Shrestha, R.; Mukherjee, P.; Tan, Y.; Litman, Z.C.; Hartwig, J.F. "Sterically Controlled, Palladium-Catalyzed Intermolecular Amination of Arenes" *J. Am. Chem. Soc.* **2013**, *135*, 8480–8483. [\[doi\]](#)

Cho, S.H.; Hartwig, J.F. "Iridium-Catalyzed Borylation of Secondary Benzylic C–H Bonds Directed by a Hydrosilane" *J. Am. Chem. Soc.* **2013**, *135*, 8157–8160. [\[doi\]](#)

Liskey, C.W.; Hartwig, J.F. "Iridium-Catalyzed C–H Borylation of Cyclopropanes" *J. Am. Chem. Soc.* **2013**, *135*, 3375–3378. [\[doi\]](#)

Chen, W.; Hartwig, J.F. "Control of Diastereoselectivity for Iridium-Catalyzed Allylation of a Prochiral Nucleophile with a Phosphate Counterion" *J. Am. Chem. Soc.* **2013**, *135*, 2068–2071. [\[doi\]](#)

Sevov, C.S.; Hartwig, J.F. "Iridium-Catalyzed Intermolecular Asymmetric Hydroheteroarylation of Bicycloalkenes" *J. Am. Chem. Soc.* **2013**, *135*, 2116–2119. [\[doi\]](#)

Fier, P.S.; Luo, J.; Hartwig, J.F. "Copper-Mediated Fluorination of Arylboronate Esters. Identification of a Copper(III) Fluoride Complex" *J. Am. Chem. Soc.* **2013**, *135*, 2552–2559. [\[doi\]](#)

Robbins, D.W.; Hartwig, J.F. “Sterically Controlled Alkylation of Arenes through Iridium-Catalyzed C-H Borylation” *Angew. Chem. Int. Ed.* **2013**, *52*, 933–937. [\[doi\]](#)

Partridge, B.M.; Hartwig, J.F. “Sterically Controlled Iodination of Arenes via Iridium-Catalyzed C-H Borylation” *Org. Lett.* **2013**, *15*, 140–143. [\[doi\]](#)

Fier, P.S.; Hartwig, J.F. “Synthesis of Difluoromethyl Ethers with Difluoromethyltriflate” *Angew. Chem. Int. Ed.* **2013**, *52*, 1–5. [\[doi\]](#)

2012

Shen, Q.; Guo, F.; Hartwig, J.F. “Aryl- and Hetarylaminines with Hetaryl Electrophiles” in *Cross Coupling and Heck-Type Reactions 2*; Wolfe, J.P., Ed.; Georg Thieme Verlag K: Stuttgart, Germany, **2012**, Vol. 6, pp. 173-194.

Ge, S.; Hartwig, J.F. “Highly Reactive, Single-Component Nickel Catalyst Precursor for Suzuki-Miyaura Cross-Coupling of Heteroaryl Boronic Acids with Heteroaryl Halides” *Angew. Chem. Int. Ed.* **2012**, *51*, 12837–12841. [\[doi\]](#)

Sergeev, A.G.; Webb, J.D.; Hartwig, J.F. “A Heterogeneous Nickel Catalyst for the Hydrogenolysis of Aryl Ethers without Arene Hydrogenation” *J. Am. Chem. Soc.* **2012**, *134*, 20226–20229. [\[doi\]](#)

Chen, C.; Weng, Z.; Hartwig, J.F. “Synthesis of Copper(I) Thiolate Complexes in the Thioetherification of Aryl Halides” *Organometallics* **2012**, *31*, 8031–8036. [\[doi\]](#)

Chen, W.; Hartwig, J.F. “Iridium-Catalyzed Regioselective and Enantioselective Allylation of Trimethylsilyloxyfuran” *J. Am. Chem. Soc.* **2012**, *134*, 15249–15252. [\[doi\]](#)

Hanley, P.S.; Marquard, S.L.; Cundari, T.R.; Hartwig, J.F. “Reductive Elimination of Alkylamines from Low-Valent, Alkylpalladium(II) Amido Complexes” *J. Am. Chem. Soc.* **2012**, *134*, 15281–15284. [\[doi\]](#)

Robbins, D.W.; Hartwig, J.F. “A C-H Borylation Approach to Suzuki-Miyaura Coupling of Typically Unstable 2-Heteroaryl and Polyfluorophenyl Boronates” *Org. Lett.* **2012**, *14*, 4266–4269. [\[doi\]](#)

Liskey, C.W.; Hartwig, J.F. “Iridium-Catalyzed Borylation of Secondary C-H Bonds in Cyclic Ethers” *J. Am. Chem. Soc.* **2012**, *134*, 12422–12425. [\[doi\]](#)

Sevov, C.S.; Zhou, J.; Hartwig, J.F. “Iridium-Catalyzed Intermolecular Hydroamination of Unactivated Aliphatic Alkenes with Amides and Sulfonamides” *J. Am. Chem. Soc.* **2012**, *134*, 11960–11963. [\[doi\]](#)

Fier, P.S.; Hartwig, J.F. “Copper Mediated Difluoromethylation of Aryl and Vinyl Iodides” *J. Am. Chem. Soc.* **2012**, *134*, 5524–5527. [\[doi\]](#)

Hartwig, J.F. "Borylation and Silylation of C–H Bonds: A Platform for Diverse C–H Bond Functionalizations" *Acct. Chem. Res.* **2012**, *45*, 864–873 [\[doi\]](#)

Klinkenberg, J.L.; Hartwig, J.F. "Reductive Elimination from Arylpalladium Cyanide Complexes" *J. Am. Chem. Soc.* **2012**, *134*, 5758–5761. [\[doi\]](#)

Simmons, E.M.; Hartwig, J.F. "Catalytic functionalization of unactivated primary C–H bonds directed by an alcohol" *Nature* **2012**, *483*, 70–73. [\[doi\]](#)

Tan, Y.; Barrios-Landeros, F; Hartwig, J.F. "Mechanistic Studies on Direct Arylation of Pyridine N-Oxide: Evidence for Cooperative Catalysis between Two Distinct Palladium Centers" *J. Am. Chem. Soc.* **2012**, *134*, 3683–3686. [\[doi\]](#)

Huang, Z.; Hartwig, J.F. "Copper(I) Enolate Complexes in Alpha-Arylation Reactions: Synthesis, Reactivity, and Mechanism" *Angew. Chem. Int. Ed.* **2012**, *51*, 1028–1032. [\[doi\]](#)

2011

Hartwig, J.F.; Pouy, M.J. "Iridium-Catalyzed Allylic Substitution" in *Topics in Organometallic Chemistry*; Andersson, P.G., Ed.; Springer-Verlag: Berlin, Germany, **2011**, Vol. 34, pp. 169-208.

Morimoto, H.; Tsubogo, T.; Litvinas, N.D.; Hartwig, J.F. "A Broadly Applicable Copper Reagent for Trifluoromethylations and Perfluoroalkylations of Aryl Iodides and Bromides" *Angew. Chem. Int. Ed.* **2011**, *50*, 3793–3798. [\[doi\]](#)

Hartwig, J.F., "Regioselectivity of the borylation of alkanes and arenes" *Chem. Soc. Rev.* **2011**, *40*, 1992–2002 (critical review). [\[doi\]](#)

Sergeev, A.G.; Hartwig, J.F. "Selective, Nickel-Catalyzed Hydrogenolysis of Aryl Ethers" *Science* **2011**, *332*, 439–443. [\[doi\]](#)

Marquard, S.L.; Hartwig, J.F. "C(sp³)–O Bond-Forming Reductive Elimination of Ethers from Bisphosphine-Ligated Benzylpalladium(II) Aryloxy Complexes" *Angew. Chem. Int. Ed.* **2011**, *50*, 7119–7123. [\[doi\]](#)

Hanley, P.S.; Hartwig, J.F. "Intermolecular Migratory Insertion of Unactivated Olefins into Palladium–Nitrogen Bonds. Steric and Electronic Effects on the Rate of Migratory Insertion" *J. Am. Chem. Soc.* **2011**, *133*, 15661-15673. [\[doi\]](#)

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. [\[doi\]](#) NIHMSID # [328258](#)

Robbins, D.W.; Hartwig, J.F. "A Simple, Multi-Dimensional Approach to High-Throughput Discovery of Catalytic Reactions" *Science*, **2011**, *333*, 1423-1427. [\[doi\]](#)

Zhijian Liu, Z.; Yamamichi, H.; Madrahimov, S.T.; Hartwig, J.F. "Rhodium Phosphine- π -Arene Intermediates in the Hydroamination of Alkenes" *J. Am. Chem. Soc.* **2011**, *133*, 2772-2782. [\[doi\]](#)

Tan, Y.; Hartwig, J. F. "Assessment of the Intermediacy of Arylpalladium Carboxylate Complexes in the Direct Arylation of Benzene: Evidence for C-H Bond Cleavage by 'Ligandless' Species" *J. Am. Chem. Soc.* **2011**, *133*, 3308-3311. [\[doi\]](#)

Carrow, B. P.; Hartwig, J. F. "Distinguishing Between Pathways for Transmetalation in Suzuki-Miyaura Reactions" *J. Am. Chem. Soc.* **2011**, *133*, 2116-2119. [\[doi\]](#)

Huang, D.S.; DeLuca, R. J.; Hartwig, J.F. " α -Arylation of Esters Catalyzed by the Pd(I) Dimer [P(*t*-Bu)₃]Pd(m-Br)]₂" *Org. Synth.* **2011**, *88*, 4-13. [\[PDF\]](#)

Liao, X.; Stanley, L.M.; Hartwig, J.F. "Enantioselective Total Syntheses of (-)-Taiwaniaquinone H and (-)-Taiwaniaquinol B by Iridium-Catalyzed Borylation and Palladium-Catalyzed Asymmetric α -Arylation" *J. Am. Chem. Soc.* **2011**, *133*, 2088-2091. [\[doi\]](#)

Hartwig, J.F. "Hydrocarbon Synthesis: Ringing The Chains" *Nature Chemistry* **2011**, *3*, 99-101. [\[doi\]](#)

Klinkenberg, J.L.; Hartwig, J.F. "Catalytic Organometallic Reactions of Ammonia" *Angew. Chem. Int. Ed.* **2011**, *50*, 86-95. [\[doi\]](#)

2010

Julian, J.D.; Hartwig, J.F. "Intramolecular Hydroamination of Unbiased and Functionalized Primary Aminoalkenes Catalyzed by a Rhodium Aminophosphine Complex" *J. Am. Chem. Soc.* **2010**, *132*, 13813-13822. [\[doi\]](#)

Giri, R.; Hartwig, J.F. "Cu(I) Amido Complexes in the Ullmann Reaction. Reactions of Cu(I)-Amido Complexes with Iodoarenes with and without Autocatalysis by CuI" *J. Am. Chem. Soc.* **2010**, *132*, 15860-15863. [\[doi\]](#)

Simmons, E.M.; Hartwig, J.F. "Iridium-Catalyzed Arene ortho-Silylation by Formal Hydroxyl-Directed C-H Activation" *J. Am. Chem. Soc.* **2010**, *132*, 17092-17095. [\[doi\]](#)

Stanley, L.M.; Hartwig, J.F. "Mechanistically Driven Development of Iridium Catalysts for Asymmetric Allylic Substitution" *Acc. Chem. Res.* **2010**, *43*, 1461-1475. [\[doi\]](#)

Huang, D.S.; Hartwig, J.F. "Palladium-Catalyzed γ -Arylation of α,β -Unsaturated Esters from Silyl Ketene Acetals" *Angew. Chem. Int. Ed.* **2010**, *49*, 5757-5761 (designated as a "Hot Paper"). [\[doi\]](#)

Klinkenberg, J.L.; Hartwig, J.F. "Slow Reductive Elimination from Arylpalladium Parent Amido Complexes" *J. Am. Chem. Soc.* **2010**, *132*, 11830-11833. [\[doi\]](#)

Liskey, C.W.; Xuebin Liao, X.; Hartwig, J.F. "Cyanation of Arenes via Iridium-Catalyzed Borylation" *J. Am. Chem. Soc.* **2010**, *132*, 11389-11391. [\[doi\]](#)

Huang, Z.; Zhou, J. Hartwig, J.F. "N-H Activation of Hydrazines by Iridium(I). Double N-H Activation to Form Iridium Aminonitrene Complexes" *J. Am. Chem. Soc.* **2010**, *132*, 11458-11460. [\[doi\]](#)

Stanley, L. M.; Bai, C.; Ueda, M.; Hartwig, J. F. "Iridium-Catalyzed Kinetic Asymmetric Transformations of Racemic Allylic Benzoates" *J. Am. Chem. Soc.* **2010**, *132*, 8918-8920. [\[doi\]](#)

Fernandez-Rodriguez, M.A.; Hartwig, J.F. "One-Pot Synthesis of Unsymmetrical Diaryl Thioethers by Palladium-Catalyzed Coupling of Two Aryl Bromides and a Thiol Surrogate" *Chem.—Eur. J.* **2010**, *16*, 2355-2359. [\[doi\]](#)

Hanley, P.S.; Markovic, D.; Hartwig, J.F. "Intermolecular Insertion of Ethylene and Octene into a Palladium-Amide Bond. Spectroscopic Evidence for an Ethylene Amido Intermediate" *J. Am. Chem. Soc.* **2010**, *132*, 6302-6303. [\[doi\]](#)

Robbins, D.W.; Boebel, T. A.; Hartwig, J.F. "Iridium-Catalyzed, Silyl-Directed Borylation of Nitrogen-Containing Heterocycles" *J. Am. Chem. Soc.* **2010**, *132*, 4068-4069. [\[doi\]](#)

Tan, Y.; Hartwig, J.F. "Palladium-Catalyzed Amination of Aromatic C–H Bonds with Oxime Esters" *J. Am. Chem. Soc.* **2010**, *132*, 3676-3677. [\[doi\]](#)

Tye, J.W.; Weng, Z.; Giri, R.; Hartwig J.F. "Copper(I) Phenoxide Complexes in the Etherification of Aryl Halides" *Angew. Chem. Int. Ed.* **2010**, *49*, 2185-2189. [\[html\]](#)

Sawyer, K.R., Cahoon, J.F., Shanoski, J.E., Glascoe, E.A., Kling, M.F., Schlegel, J.P., Zoerb, M.C., Hapke, M., Hartwig, J.F., Webster, C.E., Harris, C.B. "Time-resolved IR Studies on the Mechanism for the Functionalization of Primary C–H Bonds by Photoactivated Cp*W(CO)₃(Bpin)" *J. Am. Chem. Soc.* **2010**, *132*, 1848-1859. [\[doi\]](#)

Wei, C.S.; Jiménez-Hoyos, C.A.; Videa, M.F.; Hartwig, J.F.; Hall, M.B. "Origins of the Selectivity for Borylation of Primary over Secondary C–H Bonds Catalyzed by Cp*-Rhodium Complexes" *J. Am. Chem. Soc.* **2010**, *132*, 3078-3091. [\[doi\]](#)

Marquard, S.L.; Rosenfeld, D.C.; Hartwig, J.F. "C(sp³)-N Bond-Forming Reductive Elimination of Amines: Reactions of Bisphosphine-Ligated Benzylpalladium(II) Diarylamido Complexes" *Angew. Chem. Int. Ed.* **2010**, *49*, 793. [\[html\]](#)

Mkhalid, I.A.I.; Barnard, J.H.; Marder, T.B.; Murphy, J.M.; Hartwig, J.F. "C-H Activation for the Construction of C-B Bonds" *Chem. Rev.* **2010**, *110*, 890-931 [\[doi\]](#)

2009

Carrow, B.P.; Hartwig, J.F. "Ligandless, Anionic, Arylpalladium Halide Intermediates in the Heck Reaction" *J. Am. Chem. Soc.* **2009**, *132*, 79-81. [\[doi\]](#)

Ueda, M.; Hartwig, J.F. "Iridium-Catalyzed Regio- and Enantioselective Allylic Substitution with Aromatic and Aliphatic Sulfinates" *Org. Lett.* **2009**, *12*, 92-94. [\[doi\]](#)

Tye, J.W.; Hartwig, J.F. "Computational Studies on the Relative Rates for Migratory Insertions of Alkenes into Square-Planar Rhodium–Methyl, –Amide, and –Hydroxide Complexes" *J. Am. Chem. Soc.* **2009**, *131*, 14703. [\[doi\]](#)

Liskey, C.W., Wei, C.S., Pahls, D.R., Hartwig J.F. "Pronounced Effects of Substituents on the Iridium-Catalyzed Borylation of Aryl C–H Bonds" *Chem. Commun.* **2009**, Advance Article. [\[doi\]](#)

Stanley, L.M.; Hartwig, J.F. "Iridium-Catalyzed Regio- and Enantioselective N-Allylation of Indoles" *Angew. Chem. Int. Ed.* **2009**, *48*, 7841. [\[doi\]](#)

Pouy, M.J.; Stanley, L.M.; Hartwig, J.F. *Enantioselective, Iridium-Catalyzed Monoallylation of Ammonia*. *J. Am. Chem. Soc.* **2009**, 11312–11313. [\[doi\]](#)

Vo, G.D.; Hartwig, J.F. *Palladium-Catalyzed Coupling of Ammonia with Aryl Chlorides, Bromides, Iodides, and Sulfonates: A General Method for the Preparation of Primary Arylamines*. *J. Am. Chem. Soc.* **2009**, *131*, 11049-11061. [\[doi\]](#)

Weix, D.J.; Markovic, D.; Ueda, M.; Hartwig, J.F. *Direct, Intermolecular, Enantioselective, Iridium-Catalyzed Allylation of Carbamates to Form Carbamate-Protected, Branched Allylic Amines*. *Org. Lett.* **2009**, *11*, 2944–2947. [\[doi\]](#)

Stanley, L. M.; Hartwig, J. F. *Regio- and Enantioselective N-Allylations of Imidazole, Benzimidazole, and Purine Heterocycles Catalyzed by Single-Component Metallacyclic Iridium Complexes*. *J. Am. Chem. Soc.* **2009**, *131*, 8971–8983. [\[doi\]](#)

Alvaro, E.; Hartwig, J.F. *Resting State and Elementary Steps of the Coupling of Aryl Halides with Thiols Catalyzed by Alkylbisphosphine Complexes of Palladium*. *J. Am. Chem. Soc.* **2009**, *131*, 7858-7868. [\[doi\]](#)

Barrios-Landeros, F.; Carrow, B.P.; Hartwig, J.F. *Effect of Ligand Steric Properties and Halide Identity on the Mechanism for Oxidative Addition of Haloarenes to Trialkylphosphine Pd(0) Complexes*. *J. Am. Chem. Soc.* **2009**, *131*, 8141-8154. [\[doi\]](#)

Madrahimov, S.T.; Markovic, D.; Hartwig, J.F. *The Allyl Intermediate in Regioselective and Enantioselective Iridium-Catalyzed Asymmetric Allylic Substitution Reaction*. *J. Am. Chem. Soc.* **2009**, *131*, 7228-7229. [\[doi\]](#)

Fernández-Rodríguez, M.A.; Hartwig, J.F. *A General, Efficient, and Functional-Group-Tolerant Catalyst System for the Palladium-Catalyzed Thioetherification of Aryl Bromides and Iodides* J. Org. Chem. **2009**, 1663-1672. [\[doi\]](#)

2008

Zhou, J.; Hartwig, J.F. *Iridium-Catalyzed H/D Exchange at Vinyl Groups without Olefin Isomerization* Angew. Chem. Int. Ed. **2008**, 47, 5783-5787. [\[doi\]](#)

Hartwig, J.F. *Evolution of a Fourth Generation Catalyst for the Amination and Thioetherification of Aryl Halides* Acc. Chem. Res. **2008**, 41, 1534-1544. [\[doi\]](#)

Hartwig, J.F. *Carbon–Heteroatom Bond Formation Catalysed by Organometallic Complexes* Nature **2008**, 455, 314-322. [\[full text\]](#)

Boebel, T.A.; Hartwig, J.F. *Conversion of 1,3-Disubstituted Arenes to Chiral α,α -Diaryl Methyllummonium Chlorides Using Arene Borylation* Tetrahedron **2008**, 64, 6824-6830. [\[doi\]](#)

Boebel, T.A.; Hartwig, J.F. *Iridium-Catalyzed Preparation of Silylboranes by Silane Borylation and Their Use in the Catalytic Borylation of Arenes* Organometallics **2008**, 27, 6013-6019. [\[doi\]](#)

Herzon, S.B.; Hartwig, J.F. *Hydroaminoalkylation of Unactivated Olefins with Dialkylamines* J. Am. Chem. Soc. **2008**, 130, 14940–14941. [\[doi\]](#)

Alexanian, E.J.; Hartwig, J.F. *Mechanistic Study of β -Hydrogen Elimination from Organoplatinum(II) Enolate Complexes* J. Am. Chem. Soc. **2008**, 130, 15627-15635. [\[doi\]](#)

Ogata, T.; Hartwig, J.F. *Palladium-Catalyzed Amination of Aryl and Heteroaryl Tosylates at Room Temperature* J. Am. Chem. Soc. (Communication) **2008**, 130, 13848-13849. [\[doi\]](#)

Zhou, J. and J.F. Hartwig *Intermolecular, Catalytic Asymmetric Hydroamination of Bicyclic Alkenes and Dienes in High Yield and Enantioselectivity*. J. Am. Chem. Soc. **2008**, 130, 12220-12221. [\[doi\]](#)

Zhao, P. and J.F. Hartwig *Insertions of Ketones and Nitriles into Organorhodium(I) Complexes and *b*-Hydrocarbyl Eliminations from Rhodium(I) Alkoxo and Iminyl Complexes*. Organometallics **2008**, 27, 4749-4757. [\[doi\]](#)

Shen, Q. and J.F. Hartwig *[(CyPF-*t*Bu)PdCl₂]: An Air-Stable, One-Component, Highly Efficient Catalyst for Amination of Heteroaryl and Aryl Halides*. Org. Lett. **2008**, 18, 4109-4112. [\[doi\]](#)

Tye, J.W., Weng, Z., Johns, A. M., Incarvito, C. D., and J. F. Hartwig *Copper Complexes of Anionic Nitrogen Ligands in the Amidation and Imidation of Aryl Halides*. J. Am. Chem. Soc. **2008** 130(330) p. 9971-9983. [\[doi\]](#)

Liao, X., Weng, Z., and J. F. Hartwig, *Enantioselective-Arylation of Ketones with Aryl Triflates Catalyzed by Difluorophos Complexes of Palladium and Nickel*. J. Am. Chem. Soc. **2008** 130(1) p. 195-200. [\[doi\]](#)

Liu, Z., and J.F. Hartwig, *Mild, Rhodium-Catalyzed Intramolecular Hydroamination of Unactivated Terminal and Internal Olefins with Primary and Secondary Amines*. J. Am. Chem. Soc. **2008** 130(5) p. 1570-1571. [\[doi\]](#)

Ueno, S., and J.F. Hartwig, *Direct, Iridium-Catalyzed Asymmetric Allylic Etherification with Aliphatic Alcohols*. Angew. Chem. Int. Ed. **2008** 47(10) p. 1928-1931. [\[doi\]](#)

Vo, G.D., and J.F. Hartwig, *Palladium-Catalyzed α -Arylation of Aldehydes with Bromo- and Chloroarenes Catalyzed by $[Pd(allyl)Cl]_2$ and DPPF or *Q*-phos*. Angew. Chem. Int. Ed. **2008** 47(10) 2127-2130. [\[doi\]](#)

Shen, Q., Ogata, T., and J.F. Hartwig, *Highly Reactive, General and Long-Lived Catalysts for Palladium-Catalyzed Amination of Heteroaryl and Aryl Chlorides, Bromides and Iodides: Scope and Structure-Activity Relationships*. J. Am. Chem. Soc. **2008** 130(20) p. 6586-6596. [\[doi\]](#)

Barrios-Landeros, F., Carrow, B.P., and J.F. Hartwig, *Autocatalytic Oxidative Addition of PhBr to $Pd(PtBu_3)_2$ via $Pd(PtBu_3)_2(H)(Br)$* . J. Am. Chem. Soc. **2008** 130(18) p. 5842-5843. [\[doi\]](#)

Hagedorn, K.V., Varnavski, O., Hartwig, J.F.; Goodson III, T. *Exciton Trapping in an Organic Dendrimer Possessing No Energy Gradient*. J. Phys. Chem. C. **2008**, 112(7) p. 2235-2238. [\[doi\]](#)

Hama, T.; Hartwig, J.F. *Palladium-Catalyzed α -Arylation of Esters with Chloroarenes*. Org. Lett. **2008** 10(8) p. 1549-1552. [\[doi\]](#)

Hama, T., and J.F. Hartwig, *α -Arylation of Esters Catalyzed by the Pd(I) Dimer $\{[P(t-Bu)_3]PdBr\}_2$* . Org. Lett. **2008** 10(8) p. 1545-1548. [\[doi\]](#)

Boebel, T.A. and J.F. Hartwig, *Silyl-Directed, Iridium-Catalyzed ortho-Borylation of Arenes. A One-Pot ortho-Borylation of Phenols, Arylamines, and Alkylarenes*. J. Am. Chem. Soc. **2008** 130(24) p. 7534-7535. [\[doi\]](#)

2007

Murphy, J.M., Liao, X., and J. F. Hartwig, *Meta Halogenation of 1,3-Disubstituted Arenes via Iridium-Catalyzed Arene Borylation*. J. Am. Chem. Soc. **2007** 129(50) p. 15434-15435. [\[doi\]](#)

Stambuli, J.P., Weng, Z., Incarvito, C.D., and J. F. Hartwig, *Reductive Elimination of Ether from T-Shaped, Monomeric Arylpalladium Alkoxides*. Angew. Chem., Int. Ed. **2007** 46(40) p. 7674-7677. [\[doi\]](#)

Johns, A.M., Liu, Z., and J. F. Hartwig, *Primary tert- and sec-Allylamines via Palladium-Catalyzed Hydroamination and Allylic Substitution with Hydrazine and Hydroxylamine Derivatives*. *Angew. Chem., Int. Ed.* **2007** 46(38) p. 7259-7261 [\[doi\]](#)

Markovic, D. and J. F. Hartwig, *Resting State and Kinetic Studies on the Asymmetric Allylic Substitutions Catalyzed by Iridium-Phosphoramidite Complexes*. *J. Am. Chem. Soc.*, **2007** 129(38) p. 11680-11681.

[\[doi\]](#)

Pouy, M. J., Leitner, A., Weix, D. J., Ueno, S. and J. F. Hartwig, *Enantioselective Iridium-Catalyzed Allylic Amination of Ammonia and Convenient Ammonia Surrogates*. *Org. Lett.*, **2007** 9(20) p. 3949-3952.

[\[doi\]](#)

Shen, Q. and J. F. Hartwig, *Lewis Acid Acceleration of C-N Bond-Forming Reductive Elimination from Heteroaryl-palladium Complexes and Catalytic Amidation of Heteroaryl Bromides*. *J. Am. Chem. Soc.*, **2007**. 129(25): p. 7734-7735.

[\[doi\]](#)

Weix, D. J. and J. F. Hartwig, *Regioselective and Enantioselective Iridium-Catalyzed Allylation of Enamines*. *J. Am. Chem. Soc.*, **2007**. 129(25): p. 7720-7721.

[\[doi\]](#)

Yamashita, Y., Gopalarathnam, A., and J. F. Hartwig, *Iridium-Catalyzed, Asymmetric Amination of Allylic Alcohols Activated by Lewis Acids*. *J. Am. Chem. Soc.*, **2007**. 129(24): p. 7508-7509.

[\[doi\]](#)

Herzon, S. B., and J. F. Hartwig, *Direct, Catalytic Hydroaminoalkylation of Unactivated Olefins with N-Alkyl Arylamines*. *J. Am. Chem. Soc.*, **2007**. 129(21): p. 6690-6691.

[\[doi\]](#)

Hartwig, J. F. *Electronic Effects on Reductive Elimination To Form Carbon-Carbon and Carbon-Heteroatom Bonds from Palladium(II) Complexes*. *Inorg. Chem*, **2007**. 46(6): p. 1936-1947.

[\[doi\]](#)

Tzschucke, C. C., Murphy, J. M., and J. F. Hartwig, *Arenes to Anilines and Aryl Ethers by Sequential Iridium-Catalyzed Borylation and Copper-Catalyzed Coupling*. *Org. Lett.*, **2007**. 9(5): p. 761-764.

[\[doi\]](#)

Murphy, J. M., Tzschucke, C. C., and J. F. Hartwig, *One-Pot Synthesis of Arylboronic Acids and Aryl Trifluoroborates by Ir-Catalyzed Borylation of Arenes*. *Org. Lett.*, **2007**. 9(5): p. 757-760.

[\[doi\]](#)

Zhao, P., Incarvito, C. D. and J. F. Hartwig, *Directly Observed Transmetalation from Boron to Rhodium. b-Aryl Elimination from Rh(I) Arylboronates and Diarylborinates*. J. Am. Chem. Soc., **2007**. 129(7): p. 1876-1877.

[\[doi\]](#)

Shekhar, S., and J. F. Hartwig, *Effects of Bases and Halides on the Amination of Chloroarenes Catalyzed by Pd[P(tBu)₃]₂*. Organometallics, **2007**. 26(2): p. 340-351.

[\[doi\]](#)

2006

Johns, A. M, Tye, J. W., and J. F. Hartwig, *Relative Rates for the Aminations of h³-Allyl and h³-Benzyl Complexes of Palladium*. J. Am. Chem. Soc., **2006**. 128(50): p. 16010-16011.

[\[doi\]](#)

Takemiya, A., and J. F. Hartwig, *Palladium-Catalyzed Synthesis of Aryl Ketones by Coupling of Aryl Bromides with an Acyl Anion Equivalent*. J. Am. Chem. Soc., **2006**. 128(46): p. 14800-14801.

[\[doi\]](#)

Fernandez-Rodríguez, M. A., Shen, Q., and J. F. Hartwig, *Highly Efficient and Functional-Group-Tolerant Catalysts for the Palladium-Catalyzed Coupling of Aryl Chlorides with Thiols*. Chem.--Eur. J., **2006**. 12: p. 7782-7796.

[\[doi\]](#)

Murphy, J. M., Lawrence, J. D., Kawamura, K., Incarvito, C., and J. F. Hartwig, *Ruthenium-Catalyzed Regiospecific Borylation of Methyl C-H Bonds*. J. Am. Chem. Soc., **2006**. vol(iss): p. 13684-13685.

[\[doi\]](#)

Rosenfeld, D. C., Shekhar, S., Takemiya, A., Utsunomiya, M., and J. F. Hartwig, *Hydroamination and Hydroalkoxylation Catalyzed by Triflic Acid. Parallels to Reactions Initiated with Metal Triflates*. Org. Lett., **2006**. 8(19): p. 4179-4182.

[\[doi\]](#)

Shekhar, S., Trantow, B., Leitner, A., and J. F. Hartwig, *Sequential Catalytic Isomerization and Allylic Substitution. Conversion of Racemic Branched Allylic Carbonates to Enantioenriched Allylic Substitution Products*. J. Am. Chem. Soc., **2006**. 128(36): p. 11770-11771

[\[doi\]](#)

Su, W.; Raders, S.; Verkade, J.G.; Liao, X; Hartwig, J.F., *Palladium-Catalyzed alpha-Arylation of Trimethylsilyl Enol Ethers with Aryl Bromides and Chlorides. A Synergistic Effect of Two Metal Fluorides as Additives*. Angew. Chem., **2006**. 45(35): p.5852-5855.

[\[doi\]](#)

Shen, Q., and J. F. Hartwig, *Palladium-Catalyzed Coupling of Ammonia and Lithium Amide with Aryl Halides*. J. Am. Chem. Soc., **2006**. 128(31): p.10028-10029.

[\[doi\]](#)

Zhao, P., Incarvito, C.D., and J. F. Hartwig, *Carbon-Oxygen Bond Formation between a Terminal Alkoxo Ligand and a Coordinated Olefin. Evidence for Olefin Insertion into a Rhodium-Alkoxide*. J. Am. Chem. Soc., **2006**. 128(30): p.9642-9643.

[\[doi\]](#)

Fujita, K.I., Yamashita, M., Puschmann, F., Alvarez-Falcon, M.M., Incarvito, C.D., and J. F. Hartwig, *Organometallic Chemistry from Amidate Complexes. Reductive elimination of N-Aryl Amidates from Palladium(II)*. J. Am. Chem. Soc., **2006**. 128(28): p.9044-9045.

[\[doi\]](#)

J.F. Hartwig, *Discovery and Understanding of Transition Metal-Catalyzed Aromatic Substitution Reactions*. Synlett, **2006**. p.1283-1294.

[\[doi\]](#)

Sakai, N., Ridder, A., J. F. Hartwig, *Tropene Derivatives by Sequential Intermolecular and Transannular, Intramolecular Palladium-Catalyzed Hydroamination of Cycloheptatriene*. J. Am. Chem. Soc., **2006**. 128(25): p.8134-8135.

[\[doi\]](#)

Johns, A.M., Sakai, N., Ridder, A., and J. F. Hartwig, *Direct Measurement of the Thermodynamics of Vinylarene Hydroamination*. J. Am. Chem. Soc., **2006**. 128(29): p.9306-9307.

[\[doi\]](#)

Takemiya, A., and J.F. Hartwig, *Rhodium-Catalyzed Intramolecular, Anti-Markovnikov Hydroamination. Synthesis of 3-Arylpiperidines*. J. Am. Chem. Soc., **2006**. 128(18):15 p.6042-6043.

[\[doi\]](#)

Hama, T., Culkin, D. A., and J. F. Hartwig, *Palladium-Catalyzed Intermolecular α -Arylation of Zinc Amide Enolates under Mild Conditions*. J. Am. Chem. Soc., **2006**. 128(15): p. 4976-4985.

[\[doi\]](#)

Johns, A. M., Utsunomiya, M., Incarvito, C. D., and J. F. Hartwig, *A Highly Active Palladium Catalyst for Intermolecular Hydroamination. Factors that Control Reactivity and Additions of Functionalized Anilines to Dienes and Vinylarenes*. J. Am. Chem. Soc., **2006**. 128(6): p. 1828-1839.

[\[doi\]](#)

Fernández-Rodríguez, M. A., Shen, Q., and J. F. Hartwig, *A General and Long-Lived Catalyst for the Palladium-Catalyzed Coupling of Aryl Halides with Thiols*. J. Am. Chem. Soc., **2006**.

128(7): p. 2180-2181.

[\[doi\]](#)

Shekhar, S., Ryberg, P., and J. F. Hartwig, *Oxidative Addition of Phenyl Bromide to Pd(BINAP) vs Pd(BINAP)(amine). Evidence for Addition to Pd(BINAP)*. *Org. Lett.*, **2006**. 8(5): p. 851-854.

[\[doi\]](#)

Shekhar, S., Ryberg, P., Hartwig, J. F., Mathew, J. S., Blackmond, D. G., Strieter, E. R., and S. L. Buchwald, *Reevaluation of the Mechanism of the Amination of Aryl Halides Catalyzed by BINAP-Ligated Palladium Complexes*. *J. Am. Chem. Soc.*, **2006**. 128(11): p. 3584-3591.

[\[doi\]](#)

Zhao, P., Incarvito, C. D., and J. F. Hartwig, *Direct Observation of *b*-Aryl Eliminations from Rh(I) Alkoxides*. *J. Am. Chem. Soc.*, **2006**. 128(10): p. 3124-3125.

[\[doi\]](#)

2005

Barrios-Landeros, F. and J. F. Hartwig, *Distinct Mechanisms for the Oxidative Addition of Chloro-, Bromo-, and Iodoarenes to a Bisphosphine Palladium(0) Complex with Hindered Ligands*. *J. Am. Chem. Soc.*, **2005**. 127(19): p. 6944-6945.

[\[doi\]](#)

Bae, C., Hartwig, J. F., Boen Harris, N. K., Long, R. O., Anderson, K. S., and M. A. Hillmyer, *Catalytic Hydroxylation of Polypropylenes*. *J. Am. Chem. Soc.*, **2005**. 127(2): p. 767-776.

[\[doi\]](#)

Boller, T. M., Murphy, J. M., Hapke, M., Ishiyama, T., Miyaura, N., and J. F. Hartwig, *Mechanism of the Mild Functionalization of Arenes by Diboron Reagents Catalyzed by Iridium Complexes. Intermediacy and Chemistry of Bipyridine-Ligated Iridium Trisboryl Complexes*. *J. Am. Chem. Soc.*, **2005**. 127(41): p. 14263-14278.

[\[doi\]](#)

Graening, T. and J. F. Hartwig, *Iridium-Catalyzed Regio- and Enantioselective Allylation of Ketone Enolates*. *J. Am. Chem. Soc.*, **2005**. 127(49): p. 17192-17193.

[\[doi\]](#)

Hartwig, J. F., *Synthetic Chemistry: Recipes for Excess*. *Nature*, **2005**. 437: p. 487-488

[\[html\]](#)[\[pdf\]](#)

Hartwig, J. F., Cook, K. S., Hapke, M., Incarvito, C. D., Fan, Y., Webster, C. E., and M. B. Hall, *Rhodium Boryl Complexes in the Catalytic, Terminal Functionalization of Alkanes*. *J. Am. Chem. Soc.*, **2005**. 127(8): p. 2538-2552.

[\[doi\]](#)

Lee, D.-Y. and J. F. Hartwig, *Zinc Trimethylsilylamide as a Mild Ammonia Equivalent and Base for the Amination of Aryl Halides and Triflates*. *Org. Lett.*, **2005**. 7(6): p. 1169-1172.

[\[doi\]](#)

Leitner, A., Shekhar, S., Pouy, M. J., and J. F. Hartwig, *A Simple Iridium Catalyst with a Single Resolved Stereocenter for Enantioselective Allylic Amination. Catalyst Selection from Mechanistic Analysis*. *J. Am. Chem. Soc.*, **2005**. 127(44): p. 15506-15514.

[\[doi\]](#)

Leitner, A., Shu, C., and J. F. Hartwig, *Effects of Catalyst Activation and Ligand Steric Properties on the Enantioselective Allylation of Amines and Phenoxides*. *Org. Lett.*, **2005**. 7(6): 1093-1096.

[\[doi\]](#)

Limmert, M. E., Roy, A. H., and J. F. Hartwig, *Kumada Coupling of Aryl and Vinyl Tosylates under Mild Conditions*. *J. Org. Chem.*, **2005**. 127(45): p. 9364-9370.

[\[doi\]](#)

Shen, Q., Shekhar, S., Stambuli, J. P., and J. F. Hartwig, *Highly Reactive, General, and Long-Lived Catalysts for Coupling Heteroaryl and Aryl Chlorides with Primary Nitrogen Nucleophiles*. *Angewandte Chemie International Edition*, **2005**. 44(9): p. 1371-1375.

[\[abstract\]](#)

Takaya, J. and J. F. Hartwig, *Mechanistic Studies of Ruthenium-Catalyzed Anti-Markovnikov Hydroamination of Vinylarenes: Intermediates and Evidence for Catalysis through *p*-Arene Complexes*. *J. Am. Chem. Soc.*, **2005**. 127(16): p. 5756-5757.

[\[doi\]](#)

Tsukada, N. and J. F. Hartwig, *Intermolecular and Intramolecular, Platinum-Catalyzed, Acceptorless Dehydrogenative Coupling of Hydrosilanes with Aryl and Aliphatic Methyl C-H Bonds*. *J. Am. Chem. Soc.*, **2005**. 127(14): p. 5022-5023.

[\[doi\]](#)

Wu, L. and J. F. Hartwig, *Mild Palladium-Catalyzed Selective Monoarylation of Nitriles*. *J. Am. Chem. Soc.*, **2005**. 127(45): p. 15824-15832.

[\[doi\]](#)

Yan, X. Z., Pawlas, J., Goodson, T., III and J. F. Hartwig, *Polaron Delocalization in Ladder Macromolecular Systems*. *J. Am. Chem. Soc.*, **2005**. 127(25): p. 9105-9116.

[\[doi\]](#)

Zhao, J., Goldman, A. S., and J. F. Hartwig, *Oxidative Addition of Ammonia to Form a Stable Monomeric Amido Hydride Complex*. *Science*, **2005**. 307(5712): p. 1080-1082.

[\[link\]](#)

Zhao, J. and J. F. Hartwig, *Acceptorless, Neat, Ruthenium-Catalyzed Dehydrogenative Cyclization of Diols to Lactones*. *Organometallics*, **2005**. **24**(10): p. 2441-2446.

[\[doi\]](#)

Zhao, P., Krug, C., and J. F. Hartwig, *Transfer of Amido Groups from Isolated Rhodium(I) Amides to Alkenes and Vinylarenes*. *J. Am. Chem. Soc.*, **2005**. **127**(34): p. 12066-12073.

[\[doi\]](#)

Zhao, P. and J. F. Hartwig, *b-Aryl Eliminations from Rh(I) Iminyl Complexes*. *J. Am. Chem. Soc.*, **2005**. **127**(33): p. 11618-11619.

[\[doi\]](#)

2004

Cook, K. S., Incarvito, C. D., Webster, C. E., Fan, Y., Hall, M. B. and J. F. Hartwig, *Rhodium Silyl Boryl Hydride Complexes: Comparison of Bonding and the Rates of Elimination of Borane, Silane, and Dihydrogen*. *Angewandte Chemie International Edition*, **2004**. **43**(41): p. 5474-5477.

[\[abstract\]](#)

Culkin, D. A. and J. F. Hartwig, *Carbon-Carbon Bond-Forming Reductive Elimination from Arylpalladium Complexes Containing Functionalized Alkyl Groups. Influence of Ligand Steric and Electronic Properties on Structure, Stability, and Reactivity*. *Organometallics*, **2004**. **23**(14): p. 3398-3416.

[\[doi\]](#)

Krug, C. and J. F. Hartwig, *Imine Insertion into a Late Metal-Carbon Bond To Form a Stable Amido Complex*. *J. Am. Chem. Soc.*, **2004**. **126**(9): p. 2694-2695.

[\[doi\]](#)

Krug, C. and J. F. Hartwig, *Reactions of an Arylrhodium Complex with Aldehydes, Imines, Ketones, and Alkynes. New Classes of Insertion Reactions*. *Organometallics*, **2004**. **23**(20): p. 4594-4607.

[\[doi\]](#)

Lawrence, J. D., Takahashi, M., Bae, C. and J. F. Hartwig, *Regiospecific Functionalization of Methyl C-H Bonds of Alkyl Groups in Reagents with Heteroatom Functionality*. *J. Am. Chem. Soc.*, **2004**. **126**(47): p. 15334-15335.

[\[doi\]](#)

Leitner, A., Larsen, J., Steffens, C. and J. F. Hartwig, *Palladium-Catalyzed Addition of Mono- and Dicarbonyl Compounds to Conjugated Dienes*. *J. Org. Chem.*, **2004**. **69**(22): p. 7552-7557.

[\[doi\]](#)

Leitner, A., Shu, C., and J. F. Hartwig, *Editing the Stereochemical Elements in an Iridium Catalyst for Enantioselective Allylic Amination*. *Proc. Nat. Acad. Sci. U.S.A.*, **2004**. **101**(16): p.

5830-5833.

[\[abstract\]](#)

Liu, X. and J. F. Hartwig, *Palladium-Catalyzed α -Arylation of Trimethylsilyl Enolates of Esters and Imides. High Functional Group Tolerance and Stereoselective Synthesis of α -Aryl Carboxylic Acid Derivatives*. *J. Am. Chem. Soc.*, **2004**. 126(16): p. 5182-5191.

[\[doi\]](#)

Roy, A. H. and J. F. Hartwig, *Oxidative Addition of Aryl Sulfonates to Palladium(0) Complexes of Mono- and Bidentate Phosphines. Mild Addition of Aryl Tosylates and the Effects of Anions on Rate and Mechanism*. *Organometallics*, **2004**. 23(2): p. 194-202.

[\[doi\]](#)

Roy, A. H. and J. F. Hartwig, *Reductive Elimination of Aryl Halides upon Addition of Hindered Alkylphosphines to Dimeric Arylpalladium(II) Halide Complexes*. *Organometallics*, **2004**. 23(7): p. 1533-1541.

[\[doi\]](#)

Shekhar, S. and J. F. Hartwig, *Distinct Electronic Effects on Reductive Eliminations of Symmetrical and Unsymmetrical Bis-Aryl Platinum Complexes*. *J. Am. Chem. Soc.*, **2004**. 126(40): p. 13016-13027.

[\[doi\]](#)

Shu, C., Leitner, A. and J. F. Hartwig, *Enantioselective Allylation of Aromatic Amines after In Situ Generation of an Activated Cyclometalated Iridium Catalyst*. *Angewandte Chemie International Edition*, **2004**. 43(36): p. 4797-4800.

[\[abstract\]](#)

Shu, C. and J. F. Hartwig, *Iridium-Catalyzed Intermolecular Allylic Etherification with Aliphatic Alkoxides: Asymmetric Synthesis of Dihydropyrans and Dihydrofurans*. *Angewandte Chemie International Edition*, **2004**. 43(36): p. 4794-4797.

[\[abstract\]](#)

Stambuli, J. P., Incarvito, C. D., Buhl, M. and J. F. Hartwig, *Synthesis, Structure, Theoretical Studies, and Ligand Exchange Reactions of Monomeric, T-Shaped Arylpalladium(II) Halide Complexes with an Additional, Weak Agostic Interaction*. *J. Am. Chem. Soc.*, **2004**. 126(4): p. 1184-1194.

[\[doi\]](#)

Utsunomiya, M. and J. F. Hartwig, *Ruthenium-Catalyzed Anti-Markovnikov Hydroamination of Vinylarenes*. *J. Am. Chem. Soc.*, **2005**. 126(9): p. 2702-2703.

[\[doi\]](#)

Yamashita, M. and J. F. Hartwig, *Synthesis, Structure, and Reductive Elimination Chemistry of Three-Coordinate Arylpalladium Amido Complexes*. *J. Am. Chem. Soc.*, **2004**. 126(17): p. 5344-

5345.

[\[doi\]](#)

2003

Anastasi, N. R., Waltz, K. M., Weerakoon, W. L., and J. F. Hartwig, *A short synthesis of tetraalkoxydiborane(4) reagents*. *Organometallics*, **2003**. 22(2): p. 365-369.

[\[doi\]](#)

Culkin, D. A. and J. F. Hartwig, *Palladium-catalyzed alpha-arylation of carbonyl compounds and nitriles*. *Accounts of Chemical Research*, **2003**. 36(4): p. 234-245.

[\[doi\]](#)

Hama, T., Liu, X., Culkin, D. A., and J. F. Hartwig, *Palladium-Catalyzed α -Arylation of Esters and Amides under More Neutral Conditions*. *J. Am. Chem. Soc.*, **2003**. 125(37): p. 11176-11177.

[\[doi\]](#)

Hooper, M. W., Utsunomiya, M., and J. F. Hartwig, *Scope and mechanism of palladium-catalyzed amination of five-membered heterocyclic halides*. *J. Org. Chem.*, **2003**. 68(7): p. 2861-2873.

[\[doi\]](#)

Hooper, M. W. and J. F. Hartwig, *Understanding the Coupling of Heteroaromatic Substrates: Synthesis, Structures, and Reductive Eliminations of Heteroaryl-palladium Amido Complexes*. *Organometallics*, **2003**. 22(17): p. 3394-3403.

[\[doi\]](#)

Ishiyama, T., Takagi, J., Yonekawa, Y., Hartwig, J. F., and N. Miyaura, *Iridium-Catalyzed Direct Borylation of Five-Membered Heteroarenes by Bis(pinacolato)diboron: Regioselective, Stoichiometric, and Room Temperature Reactions*. *Advanced Synthesis and Catalysis*, **2003**. 345(9-10): p. 1103-1106.

[\[link\]](#)

Ishiyama, T., Nobuta, Y., Hartwig, J. F., and N. Miyaura, *Room Temperature Borylation of Arenes and Heteroarenes Using Stoichiometric Amounts of Pinacolborane Catalyzed by Iridium Complexes in an Inert Solvent*. *Chemical Communications*, **2003**. 23: p. 2924-2925.

[\[link\]](#)

Kanzelberger, M., Zhang, X., Emge, T. J., Goldman, A. S., Zhao, J., Incarvito, C. D., and J. F. Hartwig, *Distinct Thermodynamics for the Formation and Cleavage of N-H Bonds in Aniline and Ammonia. Directly-Observed Reductive Elimination of Ammonia from an Isolated Amido Hydride Complex*. *J. Am. Chem. Soc.*, **2003**. 125(45): p. 13644-13645.

[\[doi\]](#)

Kiener, C. A., Shu, C., Incarvito, C. D., and J. F. Hartwig, *Identification of an Activated Catalyst in the Iridium-Catalyzed Allylic Amination and Etherification. Increased Rates, Scope, and*

Selectivity. J. Am. Chem. Soc., **2003**. 125(47): p. 14272 -14273.

[\[doi\]](#)

Liu, X. and J. F. Hartwig, *Palladium-catalyzed α -arylation of azlactones to form quaternary amino acid derivatives*. Organic Letters, **2003**. 5(11): p. 1915-1918.

[\[doi\]](#)

Lopez, F., Ohmura, T., and J. F. Hartwig, *Regio- and Enantioselective Iridium-Catalyzed Intermolecular Allylic Etherification of Achiral Allylic Carbonates with Phenoxides*. J. Am. Chem. Soc., **2003**. 125(12): p. 3426-3427.

[\[doi\]](#)

Mann, G., Shelby, Q., Roy, A. H., and J. F. Hartwig, *Electronic and Steric Effects on the Reductive Elimination of Diaryl Ethers from Palladium(II)*. Organometallics, **2003**. 22(13): p. 2775-2789.

[\[doi\]](#)

Roy, A. H. and J. F. Hartwig, *Directly Observed Reductive Elimination of Aryl Halides from Monomeric Arylpalladium(II) Halide Complexes*. J. Am. Chem. Soc., **2003**. 125(46): p. 13944-13945.

[\[doi\]](#)

Roy, A. H. and J. F. Hartwig, *Oxidative Addition of Aryl Tosylates to Palladium(0) and Coupling of Unactivated Aryl Tosylates at Room Temperature*. J. Am. Chem. Soc., **2003**. 125(29): p. 8704-8705.

[\[doi\]](#)

Stambuli, J. P. and J. F. Hartwig, *Recent Advances in the Discovery of Organometallic Catalysts Using High-Throughput Screening Assays*. Current Opinion in Chemical Biology, **2003**. 7(3): p. 420-426.

[\[doi\]](#)

Stauffer, S. R. and J. F. Hartwig, *Fluorescence Resonance Energy Transfer (FRET) as a High-Throughput Assay for Coupling Reactions. Arylation of Amines as a Case Study*. J. Am. Chem. Soc., **2003**. 125(23): p. 6977-6985.

[\[doi\]](#)

Utsunomiya, M., Kawatsura, M., and J. F. Hartwig, *Palladium-Catalyzed Equilibrium Addition of Acidic OH Groups across Dienes*. Angewandte Chemie International Edition, **2003**. 42(47): p. 5865-5868.

[\[link\]](#)

Utsunomiya, M., Kuwano, R., Kawatsura, M., and J. F. Hartwig, *Rhodium-Catalyzed Anti-Markovnikov Hydroamination of Vinylarenes*. J. Am. Chem. Soc., **2003**. 125(19): p. 5608-5609.

[\[doi\]](#)

Utsunomiya, M. and J. F. Hartwig, *Intermolecular, Markovnikov Hydroamination of Vinylarenes with Alkylamines*. J. Am. Chem. Soc., **2003**. 125(47): p. 14286-14287.

[\[doi\]](#)

Webster, C. E., Fan, Y., Hall, M. B., Kunz, D., and J. F. Hartwig, *Experimental and Computational Evidence for a Boron-Assisted, Sigma-Bond Metathesis Pathway for Alkane Borylation*. J. Am. Chem. Soc., **2003**. 125(4): p. 858-859.

[\[doi\]](#)

Yamashita, M., Cuevas Vicario, J. V., and J. F. Hartwig, *Trans Influence on the Rate of Reductive Elimination. Reductive Elimination of Amines from Isomeric Arylpalladium Amides with Unsymmetrical Coordination Spheres*. J. Am. Chem. Soc., **2003**. 125(52): p. 16347-16360.

[\[doi\]](#)

2002

Alcazar-Roman, L. M. and J. F. Hartwig, *Mechanistic studies on oxidative addition of aryl halides and triflates to Pd(BINAP)₂ and structural characterization of the product from aryl triflate addition in the presence of amine*. Organometallics, **2002**. 21(3): p. 491-502.

[\[doi\]](#)

Beare, N. A. and J. F. Hartwig, *Palladium-catalyzed arylation of malonates and cyanoesters using sterically hindered trialkyl- and ferrocenyldialkylphosphine ligands*. J. Org. Chem., **2002**. 67(2): p. 541-555.

[\[doi\]](#)

Culkin, D. A. and J. F. Hartwig, *Synthesis, characterization, and reactivity of arylpalladium cyanoalkyl complexes: Selection of catalysts for the alpha-arylation of nitriles*. J. Am. Chem. Soc., **2002**. 124(32): p. 9330-9331.

[\[doi\]](#)

Hartwig, J. F., *Raising the bar for the "Perfect reaction"*. Science, **2002**. 297(5587): p. 1653-1654.

[\[abstract\]](#)[\[pdf\]](#)

Ishiyama, T., Takagi, J., Hartwig, J. F., and N. Miyaura, *A stoichiometric aromatic C-H borylation catalyzed by iridium(I)/2,2'-bipyridine complexes at room temperature*. Angewandte Chemie-International Edition, **2002**. 41(16): p. 3056-3058.

[\[abstract\]](#)[\[pdf\]](#)

Ishiyama, T., Takagi, J., Ishida, K., Miyaura, N., Anasrasi, N. R., and J. F. Hartwig, *Mild iridium-catalyzed borylation of arenes. High turnover numbers, room temperature reactions, and isolation of a potential intermediate*. J. Am. Chem. Soc., **2002**. 124(3): p. 390-391.

[\[doi\]](#)

Jorgensen, M., Lee, S., Liu, X., Wolkowski, J. P., and J. F. Hartwig, *Efficient synthesis of α -aryl esters by room-temperature palladium-catalyzed coupling of aryl halides with ester enolates*. J. Am. Chem. Soc., **2002**. 124(42): p. 12557-12565.

[\[doi\]](#)

Kataoka, N., Shelby, Q., Stambuli, J. P., and J. F. Hartwig, *Air stable, sterically hindered ferrocenyl dialkylphosphines for palladium-catalyzed C-C, C-N, and C-O bond-forming cross-couplings*. J. Org. Chem., **2002**. 67(16): p. 5553-5566.

[\[doi\]](#)

Kondo, Y., Garcia-Cuadrado, D., Hartwig, J. F., Boen, N. K., Wagner, N. L. and A. M. Hillmyer, *Rhodium-catalyzed, regiospecific functionalization of polyolefins in the melt*. J. Am. Chem. Soc., **2002**. 124(7): p. 1164-1165.

[\[doi\]](#)

Krug, C. and J. F. Hartwig, *Direct observation of aldehyde insertion into rhodium-aryl and -alkoxide complexes*. J. Am. Chem. Soc., **2002**. 124(8): p. 1674-1679.

[\[doi\]](#)

Kuwano, R., Utsunomiya, M., and J. F. Hartwig, *Aqueous hydroxide as a base for palladium-catalyzed amination of aryl chlorides and bromides*. J. Org. Chem., **2002**. 67(18): p. 6479-6486.

[\[doi\]](#)

Nettekoven, U. and J. F. Hartwig, *A new pathway for hydroamination. Mechanism of palladium-catalyzed addition of anilines to vinylarenes*. J. Am. Chem. Soc., **2002**. 124(7): p. 1166-1167.

[\[doi\]](#)

Ohmura, T. and J. F. Hartwig, *Regio- and enantioselective allylic amination of achiral allylic esters catalyzed by an iridium-phosphoramidite complex*. J. Am. Chem. Soc., **2002**. 124(51): p. 15164-15165.

[\[doi\]](#)

Pawlas, J., Nakao, Y., Kawatsura, M., J. F. Hartwig, *A general nickel-catalyzed hydroamination of 1,3-dienes by alkylamines: Catalyst selection, scope, and mechanism*. J. Am. Chem. Soc., **2002**. 124(14): p. 3669-3679.

[\[doi\]](#)

Ranasinghe, M. I., Varnavski, O. P., Pawlas, J., Hauck, S. I., Louie, J., Hartwig, J. F., and T. Goodson III, *Femtosecond excitation energy transport in triarylamine dendrimers*. J. Am. Chem. Soc., **2002**. 124(23): p. 6520-6521.

[\[doi\]](#)

Schlummer, B. and J. F. Hartwig, *Bronsted acid-catalyzed intramolecular hydroamination of protected alkenylamines. Synthesis of pyrrolidines and piperidines*. Organic Letters, **2002**. 4(9): p. 1471-1474.

[\[doi\]](#)

Stambuli, J. P., Kuwano, R., and J. F. Hartwig, *Unparalleled rates for the activation of aryl chlorides and bromides: Coupling with amines and boronic acids in minutes at room temperature*. *Angewandte Chemie-International Edition*, **2002**. 41(24): p. 4746-4748.

[\[abstract\]](#)[\[pdf\]](#)

Stambuli, J. P., Buhl, M., and J. F. Hartwig, *Synthesis, characterization, and reactivity of monomeric, arylpalladium halide complexes with a hindered phosphine as the only dative ligand*. *J. Am. Chem. Soc.*, **2002**. 124(32): p. 9346-9347.

[\[doi\]](#)

Takagi, J., Sato, K., Hartwig, J. F., Ishiyama, T., and N. Miyaura, *Iridium-catalyzed C-H coupling reaction of heteroaromatic compounds with bis(pinacolato)diboron: regioselective synthesis of heteroarylboronates*. *Tetrahedron Letters*, **2002**. 43(32): p. 5649-5651.

[\[abstract\]](#)[\[pdf\]](#)

Wolkowski, J. P. and J. F. Hartwig, *Generation of Reactivity from Typically Stable Ligands: C-C Bond-Forming Reductive Elimination from Aryl Palladium(II) Complexes of Malonate Anions*. *Angewandte Chemie-International Edition*, **2002**. 114(22): p. 4465-4467.

[\[abstract\]](#)[\[pdf\]](#)

2001

Alcazar-Roman, L. M. and J. F. Hartwig, *Mechanism of aryl chloride amination: Base-induced oxidative addition*. *J. Am. Chem. Soc.*, **2001**. 123(51): p. 12905-12906.

[\[doi\]](#)

Chae, H. K., Eddaoudi, M., Kim, J., Hauck, S. I., Hartwig, J. F., O'Keeffe, M., and O. M. Yaghi, *Tertiary building units: Synthesis, structure, and porosity of a metal-organic dendrimer framework (MODF-1)*. *J. Am. Chem. Soc.*, **2001**. 123(46): p. 11482-11483.

[\[doi\]](#)

Culkin, D. A. and J. F. Hartwig, *C-C bond-forming reductive elimination of ketones, esters, and amides from isolated arylpalladium(II) enolates*. *J. Am. Chem. Soc.*, **2001**. 123(24): p. 5816-5817.

[\[doi\]](#)

Hartwig, J. F., *Taking it personally*. *Chemical & Engineering News*, **2001**. 79(13): p. 248-248.

Kawamura, K. and J. F. Hartwig, *Isolated Ir(V) boryl complexes and their reactions with hydrocarbons*. *J. Am. Chem. Soc.*, **2001**. 123(34): p. 8422-8423.

[\[doi\]](#)

Kawatsura, M. and J. F. Hartwig, *Transition metal-catalyzed addition of amines to acrylic acid derivatives. A high-throughput method for evaluating hydroamination of primary and secondary alkylamines*. *Organometallics*, **2001**. 20(10): p. 1960-1964.

[\[doi\]](#)

Lee, S., Beare, N. A., and J. F. Hartwig, *Palladium-catalyzed alpha-arylation of esters and protected amino acids*. J. Am. Chem. Soc., **2001**. 123(34): p. 8410-8411.

[\[doi\]](#)

Lee, S., M. Jorgensen, and J. F. Hartwig, *Palladium-catalyzed synthesis of arylamines from aryl halides and lithium bis(trimethylsilyl)amide as an ammonia equivalent*. Organic Letters, **2001**. 3(17): p. 2729-2732.

[\[doi\]](#)

Lee, S. and J. F. Hartwig, *Improved catalysts for the palladium-catalyzed synthesis of oxindoles by amide α -arylation. Rate acceleration, use of aryl chloride substrates, and a new carbene ligand for asymmetric transformations*. J. Org. Chem., **2001**. 66(10): p. 3402-3415.

[\[doi\]](#)

Lober, O., Kawatsura, M., and J. F. Hartwig, *Palladium-catalyzed hydroamination of 1,3-dienes: A colorimetric assay and enantioselective additions*. J. Am. Chem. Soc., **2001**. 123(18): p. 4366-4367.

[\[doi\]](#)

Roy, A. H. and J. F. Hartwig, *Reductive elimination of aryl halides from palladium(II)*. J. Am. Chem. Soc., **2001**. 123(6): p. 1232-1233.

[\[doi\]](#)

Stambuli, J. P., Stauffer, S. R., Shaughnessy, K. H., and J. F. Hartwig, *Screening of homogeneous catalysts by fluorescence resonance energy transfer. Identification of catalysts for room-temperature Heck reactions*. J. Am. Chem. Soc., **2001**. 123(11): p. 2677-2678.

[\[doi\]](#)

Stauffer, S. R., Beare, N. A., Stambuli, J. P., and J. F. Hartwig, *Palladium-catalyzed arylation of ethyl cyanoacetate. Fluorescence resonance energy transfer as a tool for reaction discovery*. J. Am. Chem. Soc., **2001**. 123(19): p. 4641-4642.

[\[doi\]](#)

Zhao, J., Hesslink, H., and J. F. Hartwig, *Mechanism of β -hydrogen elimination from square planar iridium(I) alkoxide complexes with labile dative ligands*. J. Am. Chem. Soc., **2001**. 123(30): p. 7220-7227.

[\[doi\]](#)

2000

Alcazar-Roman, L. M., Hartwig, J. F., Rheingold, A. L., Liable-Sands, L. M., and I. A. Guzei, *Mechanistic studies of the palladium-catalyzed amination of aryl halides and the oxidative addition of aryl bromides to Pd(BINAP)₂ and Pd(DPPF)₂: An unusual case of zero-order kinetic behavior and product inhibition*. J. Am. Chem. Soc., **2000**. 122(19): p. 4618-4630.

[\[doi\]](#)

Chen, H. Y., Schlecht, S., Semple, T. C., and J. F. Hartwig, *Thermal, catalytic, regioselective functionalization of alkanes*. *Science*, **2000**. 287(5460): p. 1995-1997.

[\[abstract\]](#)[\[pdf\]](#)

Hartwig, J. F. and C. N. Muhoro, *Mechanistic studies of titanocene-catalyzed alkene and alkyne hydroboration: Borane complexes as catalytic intermediates*. *Organometallics*, **2000**. 19(1): p. 30-38.

[\[doi\]](#)

Ishiyama, T. and J. Hartwig, *A Heck-type reaction involving carbon-heteroatom double bonds. Rhodium(I)-catalyzed coupling of aryl halides with N-pyrazyl aldimines*. *J. Am. Chem. Soc.*, **2000**. 122(48): p. 12043-12044.

[\[doi\]](#)

Kawatsura, M. and J. F. Hartwig, *Palladium-catalyzed intermolecular hydroamination of vinylarenes using arylamines*. *J. Am. Chem. Soc.*, **2000**. 122(39): p. 9546-9547.

[\[doi\]](#)

Schlecht, S. and J. F. Hartwig, *s-borane complexes of manganese and rhenium*. *J. Am. Chem. Soc.*, **2000**. 122(39): p. 9435-9443.

[\[doi\]](#)

Stauffer, S. R., Lee, S., Stambuli, J. P., Hauck, S. I., and J. F. Hartwig, *High turnover number and rapid, room-temperature amination of chloroarenes using saturated carbene ligands*. *Organic Letters*, **2000**. 2(10): p. 1423-1426.

[\[doi\]](#)

Waltz, K. M. and J. F. Hartwig, *Functionalization of alkanes by isolated transition metal boryl complexes*. *J. Am. Chem. Soc.*, **2000**. 122(46): p. 11358-11369.

[\[doi\]](#)

1999

Chen, H. Y. and J. F. Hartwig, *Catalytic, regioselective end-functionalization of alkanes: Rhenium-catalyzed borylation under photochemical conditions*. *Angewandte Chemie-International Edition*, **1999**. 38(22): p. 3391-3393.

[\[abstract\]](#)[\[pdf\]](#)

Goodson, F. E., Hauck, S. I., and J. F. Hartwig, *Palladium-catalyzed synthesis of pure, regiodefined polymeric triarylamines*. *J. Am. Chem. Soc.*, **1999**. 121(33): p. 7527-7539.

[\[doi\]](#)

Hartwig, J. F., *Approaches to catalyst discovery. New carbon-heteroatom and carbon-carbon bond formation*. *Pure and Applied Chemistry*, **1999**. 71(8): p. 1417-1423.

Hartwig, J. F., Kawatsura, M., Hauck, S. I., Shaughnessy, K. H., and L. M. Alcazar-Roman *Room-temperature palladium-catalyzed amination of aryl bromides and chlorides and extended scope of aromatic C-N bond formation with a commercial ligand*. *J. Org. Chem.*, **1999**. *64*(15): p. 5575-5580.

[\[doi\]](#)

Hauck, S. I., Lakshmi, K. V. and J. F. Hartwig, *Tetraazacyclophanes by palladium-catalyzed aromatic amination. Geometrically defined, stable, high-spin diradicals*. *Organic Letters*, **1999**. *1*(13): p. 2057-2060.

[\[doi\]](#)

Kawatsura, M. and J. F. Hartwig, *Simple, highly active palladium catalysts for ketone and malonate arylation: Dissecting the importance of chelation and steric hindrance*. *J. Am. Chem. Soc.*, **1999**. *121*(7): p. 1473-1478.

[\[doi\]](#)

Mann, G., Incarvito, C. D., Rheingold, A. L., and J. F. Hartwig, *Palladium-catalyzed C-O coupling involving unactivated aryl halides. Sterically induced reductive elimination to form the C-O bond in diaryl ethers*. *J. Am. Chem. Soc.*, **1999**. *121*(13): p. 3224-3225.

[\[doi\]](#)

Muhoro, C. N., He, X. M., and J. F. Hartwig, *Titanocene borane sigma-complexes*. *J. Am. Chem. Soc.*, **1999**. *121*(21): p. 5033-5046.

[\[doi\]](#)

Shaughnessy, K. H., Kim, P., and J. F. Hartwig, *A fluorescence-based assay for high-throughput screening of coupling reactions. Application to Heck chemistry*. *J. Am. Chem. Soc.*, **1999**. *121*(10): p. 2123-2132.

[\[doi\]](#)

Waltz, K. M., Muhoro, C. N., and J. F. Hartwig, *C-H activation and functionalization of unsaturated hydrocarbons by transition-metal boryl complexes*. *Organometallics*, **1999**. *18*(17): p. 3383-3393.

[\[doi\]](#)

1998

Driver, M. S. and J. F. Hartwig, *Oxidative addition and reductive elimination reactions of trans-[Ir(PPh₃)₂(CO)(NC₄H₄)] and trans,cis-[Ir(PPh₃)₂(H)₂(CO)(NC₄H₄)] including N-H bond-forming reductive elimination of pyrrole*. *Organometallics*, **1998**. *17*(6): p. 1134-1143.

[\[doi\]](#)

Goodson, F. E. and J. F. Hartwig, *Regiodefined poly(N-arylaniline)s and donor-acceptor copolymers via palladium-mediated amination chemistry*. *Macromolecules*, **1998**. *31*(5): p. 1700-1703.

[\[doi\]](#)

Hamann, B. C. and J. F. Hartwig, *Sterically hindered chelating alkyl phosphines provide large rate accelerations in palladium-catalyzed amination of aryl iodides, bromides, and chlorides, and the first amination of aryl tosylates*. J. Am. Chem. Soc., **1998**. 120(48): p. 12706-12706.

[\[doi\]](#)

Hamann, B. C. and J. F. Hartwig, *Sterically hindered chelating alkyl phosphines provide large rate accelerations in palladium-catalyzed amination of aryl iodides, bromides, and chlorides, and the first amination of aryl tosylates*. J. Am. Chem. Soc., **1998**. 120(29): p. 7369-7370.

[\[doi\]](#)

Hamann, B. C. and J. F. Hartwig, *Systematic variation of bidentate ligands used in aryl halide amination. Unexpected effects of steric, electronic, and geometric perturbations*. J. Am. Chem. Soc., **1998**. 120(15): p. 3694-3703.

[\[doi\]](#)

Hartwig, J. F., *Carbon-heteroatom bond-forming reductive eliminations of amines, ethers, and sulfides*. Accounts of Chemical Research, **1998**. 31(12): p. 852-860.

[\[doi\]](#)

Hartwig, J. F., *Transition metal catalyzed synthesis of arylamines and aryl ethers from aryl halides and triflates: Scope and mechanism*. Angewandte Chemie-International Edition, **1998**. 37(15): p. 2047-2067.

[\[abstract\]](#)[\[pdf\]](#)

Hartwig, J. F., *Synthesis, structure, and reactivity of a palladium hydrazone complex: A new type of reductive elimination reaction to form C-N bonds and catalytic arylation of benzophenone hydrazone*. Angewandte Chemie-International Edition, **1998**. 37(15): p. 2090-2093.

[\[abstract\]](#)[\[pdf\]](#)

Louie, J. and J. F. Hartwig, *The largest discrete oligo(m-aniline). An exponential growth strategy using palladium-catalyzed amination of aryl sulfonates*. Macromolecules, **1998**. 31(19): p. 6737-6739.

[\[doi\]](#)

Mann, G., Baranano, D., Hartwig, J. F., Rheingold, A. L., and I. A. Guzei, *Carbon-sulfur bond-forming reductive elimination involving sp -, sp^2 -, and sp^3 -hybridized carbon. Mechanism, steric effects, and electronic effects on sulfide formation*. J. Am. Chem. Soc., **1998**. 120(36): p. 9205-9219.

[\[doi\]](#)

Mann, G., Hartwig, J. F., Driver, M. S., and C. Fernandez-Rivas, *Palladium-catalyzed C-N(sp^2) bond formation: N-arylation of aromatic and unsaturated nitrogen and the reductive elimination chemistry of palladium azolyl and methyleneamido complexes*. J. Am. Chem. Soc., **1998**. 120(4): p. 827-828.

[\[doi\]](#)

Shaughnessy, K. H., Hamann, B. C., and J. F. Hartwig, *Palladium-catalyzed inter- and intramolecular alpha-arylation of amides. Application of intramolecular amide arylation to the synthesis of oxindoles*. *J. Org. Chem.*, **1998**. 63(19): p. 6546-6553.

[\[doi\]](#)

1997

Baranano, D., Mann, G., and J. F. Hartwig, *Nickel and palladium-catalyzed cross-couplings that form carbon-heteroatom and carbon-element bonds*. *Current Organic Chemistry*, **1997**. 1(3): p. 287-305.

Driver, M. S. and J. F. Hartwig, *Energetics and mechanism of alkylamine N-H bond cleavage by palladium hydroxides: N-H activation by unusual acid-base chemistry*. *Organometallics*, **1997**. 16(26): p. 5706-5715.

[\[doi\]](#)

Driver, M. S. and J. F. Hartwig, *Carbon-nitrogen-bond-forming reductive elimination of arylamines from palladium(II) phosphine complexes*. *J. Am. Chem. Soc.*, **1997**. 119(35): p. 8232-8245.

[\[doi\]](#)

Hamann, B. C. and J. F. Hartwig, *Palladium-catalyzed direct alpha-arylation of ketones. Rate acceleration by sterically hindered chelating ligands and reductive elimination from a transition metal enolate complex*. *J. Am. Chem. Soc.*, **1997**. 119(50): p. 12382-12383.

[\[doi\]](#)

Hartwig, J. F., *Palladium-catalyzed amination of aryl halides: Mechanism and rational catalyst design*. *Synlett*, **1997**. (4): p. 329-340.

[\[pdf\]](#)

Louie, J., Hartwig, J. F., and A. J. Fry, *Discrete high molecular weight triarylamine dendrimers prepared by palladium-catalyzed amination*. *J. Am. Chem. Soc.*, **1997**. 119(48): p. 11695-11696.

[\[doi\]](#)

Louie, J., Driver, M. S., Hamann, B. C., and J. F. Hartwig, *Palladium-catalyzed amination of aryl triflates and importance of triflate addition rate*. *J. Org. Chem.*, **1997**. 62(5): p. 1268-1273.

[\[doi\]](#)

Mann, G. and J. F. Hartwig, *Palladium-catalyzed formation of diaryl ethers from aryl bromides. Electron poor phosphines enhance reaction yields*. *Tetrahedron Letters*, **1997**. 38(46): p. 8005-8008.

[\[abstract\]](#)[\[pdf\]](#)

Mann, G. and J. F. Hartwig, *Nickel- vs palladium-catalyzed synthesis of protected phenols from aryl halides*. *J. Org. Chem.*, **1997**. 62(16): p. 5413-5418.

[\[doi\]](#)

Muhoro, C. N. and J. F. Hartwig, *Synthesis, structure, and reactivity of [Cp₂Ti(HBcat)(PMe₃)]: A monoborane sigma complex*. *Angewandte Chemie-International Edition*, **1997**. 36(13-14): p. 1510-1512.

Waltz, K. M. and J. F. Hartwig, *Selective functionalization of alkanes by transition-metal boryl complexes*. *Science*, **1997**. 277(5323): p. 211-213.

[\[pdf\]](#)

1996

Driver, M. S. and J. F. Hartwig, *A second-generation catalyst for aryl halide amination: Mixed secondary amines from aryl halides and primary amines catalyzed by (DPPF)PdCl₂*. *J. Am. Chem. Soc.*, **1996**. 118(30): p. 7217-7218.

[\[doi\]](#)

Driver, M. S. and J. F. Hartwig, *General N-H activation of primary alkylamines by a late transition-metal complex*. *J. Am. Chem. Soc.*, **1996**. 118(17): p. 4206-4207.

[\[doi\]](#)

Hartwig, J. F. and X. M. He, *Structural and reaction chemistry of tungstenocene boryl complexes*. *Organometallics*, **1996**. 15(25): p. 5350-5358.

[\[doi\]](#)

Hartwig, J. F., Muhoro, C. N., He, X., Eisenstein, O., Bosque, R., and F. Maseras, *Catecholborane bound to titanocene. Unusual coordination of ligand sigma-bonds*. *J. Am. Chem. Soc.*, **1996**. 118(44): p. 10936-10937.

[\[doi\]](#)

Hartwig, J. F., *Directly-observed b-hydrogen elimination of a late transition metal amido complex and unusual fate of imine byproducts*. *J. Am. Chem. Soc.*, **1996**. 118(29): p. 7010-7011.

[\[doi\]](#)

Hartwig, J. F., Richards, S., Baranano, D., and F. Paul, *Influences on the relative rates for C-N bond-forming reductive elimination and beta-hydrogen elimination of amides. A case study on the origins of competing reduction in the palladium-catalyzed amination of aryl halides*. *J. Am. Chem. Soc.*, **1996**. 118(15): p. 3626-3633.

[\[doi\]](#)

Hartwig, J. F. and X. M. He, *Reactivity of tungstenocene with B-B and B-H bonds versus C-H bonds*. *Angewandte Chemie-International Edition in English*, **1996**. 35(3): p. 315-317.

He, X. M. and J. F. Hartwig, *True metal-catalyzed hydroboration with titanium*. *J. Am. Chem. Soc.*, **1996**. 118(7): p. 1696-1702.

[\[doi\]](#)

He, X. M. and J. F. Hartwig, *Boryls bound to iron carbonyl. Structure of a rare bis(boryl) complex, synthesis of the first anionic boryl, and reaction chemistry that includes the synthetic equivalent of boryl anion transfer*. *Organometallics*, **1996**. 15(1): p. 400-407.

[\[doi\]](#)

Louie, J. and J. F. Hartwig, *A route to Pd-0 from Pd-II metallacycles in amination and cross-coupling chemistry*. *Angewandte Chemie-International Edition in English*, **1996**. 35(20): p. 2359-2361.

Louie, J., F. Paul, and J. F. Hartwig, *Catalysis with platinum-group alkylamido complexes, the active palladium amide in catalytic aryl halide aminations as deduced from kinetic data and independent generation*. *Organometallics*, **1996**. 15(12): p. 2794-2805.

[\[doi\]](#)

Mann, G. and J. F. Hartwig, *Palladium alkoxides: Potential intermediacy in catalytic amination, reductive elimination of ethers, and catalytic etheration. Comments on alcohol elimination from Ir(III)*. *J. Am. Chem. Soc.*, **1996**. 118(51): p. 13109-13110.

[\[doi\]](#)

Rablen, P. R. and J. F. Hartwig, *Accurate borane sequential bond dissociation energies by high-level ab initio computational methods*. *J. Am. Chem. Soc.*, **1996**. 118(19): p. 4648-4653.

[\[doi\]](#)

1995

Baranano, D. and J. F. Hartwig, *Carbon-Heteroatom Bond-Forming Reductive Elimination - Mechanism, Importance of Trapping Reagents, and Unusual Electronic Effects During Formation of Aryl Sulfides*. *J. Am. Chem. Soc.*, **1995**. 117(10): p. 2937-2938.

[\[first page\]](#)[\[pdf\]](#)

Driver, M. S. and J. F. Hartwig, *A Rare, Low-Valent Alkylamido Complex, a Diphenylamido Complex, and Their Reductive Elimination of Amines by 3-Coordinate Intermediates*. *J. Am. Chem. Soc.*, **1995**. 117(16): p. 4708-4709.

[\[first page\]](#)[\[pdf\]](#)

Paul, F., Patt, J., and J. F. Hartwig, *Structural Characterization and Simple Synthesis of (Pd[P(O-Tol)3]2), Dimeric Palladium(II) Complexes Obtained by Oxidative Addition of Aryl Bromides, and Corresponding Monometallic Amine Complexes*. *Organometallics*, **1995**. 14(6): p. 3030-3039.

[\[first page\]](#)[\[pdf\]](#)

Hartwig, J. F. and F. Paul, *Oxidative Addition of Aryl Bromide after Dissociation of Phosphine from a 2-Coordinate Palladium(0) Complex, Bis(Tri-O-Tolylphosphine)Palladium(0)*. *J. Am. Chem. Soc.*, **1995**. 117(19): p. 5373-5374.

[\[first page\]](#)[\[pdf\]](#)

Louie, J. and J. F. Hartwig, *Transmetalation Involving Organotin Aryl, Thiolate, and Amide Compounds - an Unusual Type of Dissociative Ligand Substitution-Reaction*. J. Am. Chem. Soc., **1995**. 117(46): p. 11598-11599.

[\[pdf\]](#)

Louie, J. and J. F. Hartwig, *Palladium-Catalyzed Synthesis of Arylamines from Aryl Halides - Mechanistic Studies Lead to Coupling in the Absence of Tin Reagents*. Tetrahedron Letters, **1995**. 36(21): p. 3609-3612.

[\[pdf\]](#)

Waltz, K.M., He, X., Muhoro, C., and J. F. Hartwig, *Hydrocarbon Functionalization by Transition-Metal Boryls*. J. Am. Chem. Soc., **1995**. 117(45): p. 11357-11358.

[\[first page\]](#)[\[pdf\]](#)

1994

Hartwig, J. F. and S. R. De Gala, *A Continuum Resulting from Equilibrium between 2 Structural Extremes in Tungstenocene and Niobocene Boryl and Hydridoborate Complexes - p-Bonding in a d2 Boryl System and the First d0 Boryl Complex*. J. Am. Chem. Soc., **1994**. 116(8): p. 3661-3662.

[\[first page\]](#)[\[pdf\]](#)

Hartwig, J. F., Bhandari, S., and P. R. Rablen, *Addition of Catecholborane to a Ruthenium-Alkyl - Evidence for Sigma-Bond Metathesis with a Low-Valent, Late Transition-Metal*. J. Am. Chem. Soc., **1994**. 116(5): p. 1839-1844.

[\[first page\]](#)[\[pdf\]](#)

Paul, F., Patt, J., and J. F. Hartwig, *Palladium-Catalyzed Formation of Carbon-Nitrogen Bonds - Reaction Intermediates and Catalyst Improvements in the Hetero Cross-Coupling of Aryl Halides and Tin Amides*. J. Am. Chem. Soc., **1994**. 116(13): p. 5969-5970.

[\[first page\]](#)[\[pdf\]](#)

Rablen, P. R., Hartwig, J. F., and S. P. Nolan, *First Transition Metal-Boryl Bond-Energy and Quantitation of Large Differences in Sequential Bond-Dissociation Energies of Boranes*. J. Am. Chem. Soc., **1994**. 116(9): p. 4121-4122.

[\[first page\]](#)[\[pdf\]](#)

1993

Hartwig, J. F. and S. Huber, *Transition-Metal Boryl Complexes - Structure and Reactivity of CpFe(CO)2Bcat and CpFe(CO)2BPh2*. J. Am. Chem. Soc., **1993**. 115(11): p. 4908-4909.

[\[first page\]](#)[\[pdf\]](#)