



Paul J. Chirik

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Date of Birth: June 13, 1973

Experience

Edwards S. Sanford Professor of Chemistry Princeton University, Princeton, NJ	2011-present
Peter J. W. Debye Professor of Chemistry and Chemical Biology Cornell University, Ithaca, NY	2009-2011
Associate Professor of Chemistry and Chemical Biology Cornell University, Ithaca, NY	2006-2009
Assistant Professor of Chemistry and Chemical Biology Cornell University, Ithaca, NY	2001-2006
Postdoctoral Research Fellow Massachusetts Institute of Technology, Cambridge, MA Advisor: Professor Christopher C. Cummins	2000-2001

Education

Doctor of Philosophy, Chemistry California Institute of Technology, Pasadena, CA Advisor: Professor John E. Bercaw Dissertation: <i>Ancillary Ligand Effects on Fundamental Transformations in Metallocene Catalyzed Olefin Polymerization.</i>	April, 2000
Bachelor of Science, Chemistry; <i>Magna Cum Laude</i> Virginia Tech, Blacksburg, VA Research Advisor: Professor Joseph S. Merola	May, 1995

Selected Honors and Awards

Winner, Presidential Green Chemistry Challenge (2016)
First JSCC International Award for Creative Work (2015)
Closs Lecturer, University of Chicago (2014)
Dalton Lecturer, University California – Berkeley (2011)
Winner, Blavatnik Award for Young Scientists, NYAS (2009)
Arthur C. Cope Scholar Award, American Chemical Society (2009)
Bessel Fellow of the Alexander von Humboldt Foundation (2008)
Camille Dreyfus-Teacher Scholar (2006)
Stephen and Margery Russell Distinguished Teaching Award (2005)
David and Lucile Packard Fellow in Science and Engineering (2004)
NSF CAREER Award (2003)
Herbert Newby McCoy Award for Outstanding Dissertation, Caltech (2000)

Synergistic Activities

Editor-in-Chief, *Organometallics*, 2015-
Associate Director for External Partnerships, Andlinger Center 2015-2016
Chair, *Inorganic Reaction Mechanisms Gordon Conference*, 2015
Chair, *NSF Workshop on Base Metal Catalysis*, 2013
Vice Chair, *Inorganic Reaction Mechanisms Gordon Conference*, 2013
Associate Editor, *Catalysis Science and Technology*, 2010-
Advisory Board, *Inorganic Chemistry*, 2012-
Advisory Board, *Dalton Transactions*, 2009-
Advisory Board, *Organometallics*, 2008-
Defense Science Study Group, 2010-2011
Director of Undergraduate Studies, Cornell Chemistry and Chemical Biology, 2006-2010
Faculty Advisor, Research Experience for Undergraduates, CCMR, 2006-2010
Faculty Fellow, Cornell University, 2005-2010
Consultant, Dow Chemical, 2007-2009
Advisory Board, Learning Strategies Center, Cornell University, 2005-2010
Editorial Board for *Chemistry for Engineers*, Houghton Mifflin Publishers, 2002-2004
Discussion Leader, Freshman Book Project, Cornell University, 2003
Executive Board, Cornell Section of the American Chemical Society, 2002-2007
Author, *Comprehensive Organometallic Chemistry III*
Executive Board, Division of Inorganic Chemistry of the ACS, 2003-2004

Named Lectureships

Allergan Lecture, University of California – Irvine (2017)
Singapore Nanyang Distinguished Lectureship (2017)
Nankai-Asymchem Lecture (2016)
Xingda Lecturer, Peking University (2015)
Closs Lecturer, University of Chicago (2014)
Dalton Lecturer of the Royal Society of Chemistry (2011)

20 Most Recent Publications (160 total)

160. Neely, J. M.; Bezdek, M. J.; Chirik, P. J. "Insight into transmetalation enables cobalt-catalyzed Suzuki-Miyaura coupling." *ACS Central Science* **2016**, 2, 935-942.
159. Bezdek, M.; Guo, S.; Chirik, P. J. "Coordination induced bond weakening of ammonia, water, hydrazine with a molybdenum complex." *Science* **2016**, 354, 730-733.
158. Léonard, N. G.; Bezdek, M. J.; Chirik, P. J. "Cobalt-catalyzed C(sp²)-H borylation with an air-stable, readily prepared terpyridine cobalt(II) bis(acetate) precatalyst." *Organometallics* **2016**, ASAP.
157. Pappas, I.; Chirik, P. J. "Titanocene amides, hydrazides, and imides: Determination of thermodynamic parameters relevant to nitrogen fixation." *J. Am. Chem. Soc.* **2016**, 138, 13379-13389.
156. Obligacion, J. V.; Semproni, S. P.; Pappas, I.; Chirik, P. J. "Cobalt catalyzed C(sp²)-H borylation: Mechanistic insights inspire catalyst design." *J. Am. Chem. Soc.* **2016**, 138, 10645-10653.
155. Bezdek, M. J.; Chirik, P. J. "Thermodynamics of N-H bond formation in bis(phosphine) molybdenum(II) diazenides and the influence of the *trans* ligand." *Dalton Trans.* **2016**, 45, 15922.

154. Bezdek, M. J.; Chirik, P. J. "Expanding boundaries: N₂ cleavage and functionalization beyond early transition metals." *Angew. Chem. Int. Ed.* **2016**, *55*, 7892-7896.
153. Pappas, I.; Treacy, S.; Chirik, P. J. "Alkene hydrosilylation using tertiary silanes with α -diimine nickel catalysts. Redox-active ligands promote a distinct mechanistic pathway from platinum catalysts." *ACS Catal.* **2016**, *6*, 4105-4109.
152. Schuster, C. H.; Diao, T.; Pappas, I.; Chirik, P. J. "Bench-stable, substrate activated cobalt carboxylate pre-catalysts for alkene hydrosilylation with tertiary silanes." *ACS Catal.* **2016**, *6*, 2632-2636.
151. Schaefer, B. A.; Margulieux, G. W.; Chirik, P. J. "Cationic pyridine(diimine) iron tethered alkene complexes: Synthetic models for elusive intermediates in iron-catalyzed ethylene polymerization." *Bull. Jpn. Soc. Coord. Chem.* **2016**, *67*, 19-29.
150. Bezdek, M. J.; Guo S.; Chirik, P. J. "Terpyridine molybdenum N₂ chemistry: Synthesis of dinitrogen complexes that vary by five oxidation states." *Inorg. Chem.* **2016**, *55*, 3117-3127.
149. Shevlin, M.; Friedfeld, M. R.; Sheng, H.; Pierson, N. A.; Hoyt, J. M.; Campeau, L.-C.; Chirik, P. J. "Nickel-catalyzed asymmetric alkene hydrogenation of α,β -unsaturated esters: High throughput experimentation enabled reaction discovery, optimization and mechanistic elucidation." *J. Am. Chem. Soc.* **2016**, *138*, 3562-3569.
148. Friedfeld, M. R.; Shevlin, M.; Margulieux, G. W.; Campeau, L.-C.; Chirik, P. J. "Cobalt-catalyzed enantioselective hydrogenation of minimally functionalized alkenes: Isotopic labeling provides insight into the origin of stereoselectivity and alkene insertion preferences." *J. Am. Chem. Soc.* **2016**, *138*, 3314-3324.
147. Palmer, W. N.; Obligacion, J. V.; Pappas, I.; Chirik, P. J. "Cobalt-catalyzed benzylic borylation: Enabling polyborylation and functionalization of remote, unactivated C(sp³)-H bonds." *J. Am. Chem. Soc.* **2016**, *138*, 766-769.
146. Yu, R. P.; Hesk, D.; Rivera, N.; Pelczer, I.; Chirik, P. J. "Iron-catalyzed tritiation of pharmaceuticals." *Nature* **2016**, *529*, 195-199.
145. Schaefer, B. A.; Margulieux, G. W.; Tiedemann, M. A.; Small, B. L.; Chirik, P. J. "Synthesis and electronic structure of iron borate betaine complexes as a route to single-component iron ethylene oligomerization and polymerization catalysts." *Organometallics* **2015**, *34*, 5615-5623.
144. Hoyt, J. M.; Schmidt, V. A.; Tondreau, A. M.; Chirik, P. J. "Iron-catalyzed intermolecular [2+2] cycloadditions of unactivated alkenes." *Science* **2015**, *349*, 960-963.
143. Schmidt, V. A.; Hoyt, J. M.; Margulieux, G. W.; Chirik, P. J. "Cobalt-catalyzed [2 π +2 π] cycloadditions of alkenes: Scope, mechanism, and elucidation of electronic structure of catalytic intermediates." *J. Am. Chem. Soc.* **2015**, *137*, 7093-7914.
142. Chirik, P. J. "Iron- and cobalt-catalyzed alkene hydrogenation: Catalysis with both redox-active and strong field ligands." *Acc. Chem. Res.* **2015**, *48*, 1687-1695.
141. Scheuermann, M. L.; Johnson, E. J.; Chirik, P. J. "Alkene isomerization-hydroboration promoted by phosphine-ligated cobalt catalysts." *Org. Lett.* **2015**, *17*, 2716-2719.
140. Obligacion, J. V.; Neely, J. M.; Yazdani, A. N.; Pappas, I.; Chirik, P. J. "Cobalt catalyzed Z-selective hydroboration of terminal alkynes and elucidation of the origin of selectivity." *J. Am. Chem. Soc.* **2015**, *137*, 5855-5858.