Matthew S Sigman

List of Publications by Citations

232 papers	18,888 citations	76 h-index	131 g-index
254 ext. papers	21,386 ext. citations	13.2 avg, IF	7.5 L-index

#	Paper	IF	Citations
232	Advances in transition metal (Pd, Ni, Fe)-catalyzed cross-coupling reactions using alkyl-organometallics as reaction partners. *Chemical Reviews*, **2011**, 111, 1417-92	68.1	1611
231	Schiff Base Catalysts for the Asymmetric Strecker Reaction Identified and Optimized from Parallel Synthetic Libraries. *Journal of the American Chemical Society*, **1998**, 120, 4901-4902	16.4	775
230	Ligand-modulated palladium-catalyzed aerobic alcohol oxidations. *Accounts of Chemical Research*, **2006**, 39, 221-9	24.3	521
229	Exploiting non-covalent interactions for catalyst design. *Nature*, **2017**, 543, 637-646	50.4	423
228	Substrate channelling as an approach to cascade reactions. *Nature Chemistry*, **2016**, 8, 299-309	17.6	399
227	A General Catalyst for the Asymmetric Strecker Reaction This work was supported by the NIH (GM-43214). A postdoctoral fellowship to M.S.S. (NIH), and a predoctoral fellowship to P.V. sponsored by Alfred Bader are gratefully acknowledged. *Angewandte Chemie - International Edition*, **2000**, 39, 1279-1281	16.4	388
226	Mechanistic approaches to palladium-catalyzed alkene difunctionalization reactions. *Organic and Biomolecular Chemistry*, **2008**, 6, 4083-8	3.9	355
225	Enantioselective Heck arylations of acyclic alkenyl alcohols using a redox-relay strategy. *Science*, **2012**, 338, 1455-8	33.3	334
224	Enantioselective construction of remote quaternary stereocentres. *Nature*, **2014**, 508, 340-4	50.4	323
223	Palladium-catalyzed enantioselective oxidations of alcohols using molecular oxygen. *Journal of the American Chemical Society*, **2001**, 123, 7475-6	16.4	294
222	Applications of ortho-quinone methide intermediates in catalysis and asymmetric synthesis. *Journal of Organic Chemistry*, **2011**, 76, 9210-5	4.2	270
221	Enantioselective Addition of Hydrogen Cyanide to Imines Catalyzed by a Chiral (Salen)Al(III) Complex. *Journal of the American Chemical Society*, **1998**, 120, 5315-5316	16.4	270
220	A well-defined complex for palladium-catalyzed aerobic oxidation of alcohols: design, synthesis, and mechanistic considerations. *Angewandte Chemie - International Edition*, **2003**, 42, 3810-3	16.4	261
219	Elucidating the significance of beta-hydride elimination and the dynamic role of acid/base chemistry in a palladium-catalyzed aerobic oxidation of alcohols. *Journal of the American Chemical Society*, **2004**, 126, 9724-34	16.4	209
218	Palladium(II)-catalyzed enantioselective aerobic dialkoxylation of 2-propenyl phenols: a pronounced effect of copper additives on enantioselectivity. *Journal of the American Chemical Society*, **2007**, 129, 3076-7	16.4	208
217	Synthesis and preliminary biological studies of 3-substituted indoles accessed by a palladium-catalyzed enantioselective alkene difunctionalization reaction. *Journal of the American Chemical Society*, **2010**, 132, 7870-1	16.4	204
216	Enantioselective redox-relay oxidative heck arylations of acyclic alkenyl alcohols using boronic acids. *Journal of the American Chemical Society*, **2013**, 135, 6830-3	16.4	199

215	The Development of Multidimensional Analysis Tools for Asymmetric Catalysis and Beyond. *Accounts of Chemical Research*, **2016**, 49, 1292-301	24.3	198
214	A palladium-catalyzed three-component cross-coupling of conjugated dienes or terminal alkenes with vinyl triflates and boronic acids. *Journal of the American Chemical Society*, **2011**, 133, 5784-7	16.4	194
213	Recent progress in Wacker oxidations: moving toward molecular oxygen as the sole oxidant. *Inorganic Chemistry*, **2007**, 46, 1903-9	5.1	192
212	Mechanistic questions about the reaction of molecular oxygen with palladium in oxidase catalysis. *Angewandte Chemie - International Edition*, **2006**, 45, 6612-5	16.4	187
211	Multidimensional steric parameters in the analysis of asymmetric catalytic reactions. *Nature Chemistry*, **2012**, 4, 366-74	17.6	176
210	Imparting catalyst control upon classical palladium-catalyzed alkenyl C-H bond functionalization reactions. *Accounts of Chemical Research*, **2012**, 45, 874-84	24.3	166
209	Mechanism, reactivity, and selectivity in palladium-catalyzed redox-relay Heck arylations of alkenyl alcohols. *Journal of the American Chemical Society*, **2014**, 136, 1960-7	16.4	161
208	Predictive and mechanistic multivariate linear regression models for reaction development. *Chemical Science*, **2018**, 9, 2398-2412	9.4	159
207	Palladium-catalyzed oxidative intermolecular difunctionalization of terminal alkenes with organostannanes and molecular oxygen. *Angewandte Chemie - International Edition*, **2009**, 48, 3146-9	16.4	155
206	Development and comparison of the substrate scope of Pd-catalysts for the aerobic oxidation of alcohols. *Journal of Organic Chemistry*, **2005**, 70, 3343-52	4.2	154
205	Three-dimensional correlation of steric and electronic free energy relationships guides asymmetric propargylation. *Science*, **2011**, 333, 1875-8	33.3	152
204	Palladium catalysts for aerobic oxidative kinetic resolution of secondary alcohols based on mechanistic insight. *Organic Letters*, **2003**, 5, 63-5	6.2	150
203	Nickel-Catalyzed Enantioselective Reductive Cross-Coupling of Styrenyl Aziridines. *Journal of the American Chemical Society*, **2017**, 139, 5688-5691	16.4	148
202	Organic chemistry. A data-intensive approach to mechanistic elucidation applied to chiral anion catalysis. *Science*, **2015**, 347, 737-43	33.3	148
201	Pursuit of Noncovalent Interactions for Strategic Site-Selective Catalysis. *Accounts of Chemical Research*, **2017**, 50, 609-615	24.3	147
200	Advancing the mechanistic understanding of an enantioselective palladium-catalyzed alkene difunctionalization reaction. *Journal of the American Chemical Society*, **2010**, 132, 17471-82	16.4	140
199	A synthetic chemist's guide to electroanalytical tools for studying reaction mechanisms. *Chemical Science*, **2019**, 10, 6404-6422	9.4	136
198	Palladium-catalyzed enantioselective addition of two distinct nucleophiles across alkenes capable of quinone methide formation. *Journal of the American Chemical Society*, **2009**, 131, 17074-5	16.4	135

197	Discovery of and mechanistic insight into a ligand-modulated palladium-catalyzed Wacker oxidation of styrenes using TBHP. *Journal of the American Chemical Society*, **2005**, 127, 2796-7	16.4	133
196	Parameterization of phosphine ligands reveals mechanistic pathways and predicts reaction outcomes. *Nature Chemistry*, **2016**, 8, 610-7	17.6	132
195	Enantioselective Dehydrogenative Heck Arylations of Trisubstituted Alkenes with Indoles to Construct Quaternary Stereocenters. *Journal of the American Chemical Society*, **2015**, 137, 15668-71	16.4	121
194	A highly selective and general palladium catalyst for the oxidative Heck reaction of electronically nonbiased olefins. *Journal of the American Chemical Society*, **2010**, 132, 13981-3	16.4	121
193	Analyzing site selectivity in Rh2(esp)2-catalyzed intermolecular C-H amination reactions. *Journal of the American Chemical Society*, **2014**, 136, 5783-9	16.4	119
192	Palladium-catalyzed 1,4-difunctionalization of butadiene to form skipped polyenes. *Journal of the American Chemical Society*, **2013**, 135, 4167-70	16.4	119
191	Operationally simple and highly (E)-styrenyl-selective Heck reactions of electronically nonbiased olefins. *Journal of the American Chemical Society*, **2011**, 133, 9692-5	16.4	119
190	Physical Organic Approach to Persistent, Cyclable, Low-Potential Electrolytes for Flow Battery Applications. *Journal of the American Chemical Society*, **2017**, 139, 2924-2927	16.4	118
189	Zebrafish screen identifies novel compound with selective toxicity against leukemia. *Blood*, **2012**, 119, 5621-31	2.2	116
188	The renaissance of palladium(II)-catalyzed oxidation chemistry. *Organic and Biomolecular Chemistry*, **2004**, 2, 2551-4	3.9	114
187	Using mechanistic and computational studies to explain ligand effects in the palladium-catalyzed aerobic oxidation of alcohols. *Journal of the American Chemical Society*, **2005**, 127, 8499-507	16.4	113
186	Palladium-catalyzed enantioselective Heck alkenylation of acyclic alkenols using a redox-relay strategy. *Journal of the American Chemical Society*, **2015**, 137, 3462-5	16.4	111
185	Oxygen-induced ligand dehydrogenation of a planar bis-mu-chloronickel(I) dimer featuring an NHC ligand. *Inorganic Chemistry*, **2005**, 44, 3774-6	5.1	108
184	Dual role of (-)-sparteine in the palladium-catalyzed aerobic oxidative kinetic resolution of secondary alcohols. *Journal of the American Chemical Society*, **2002**, 124, 8202-3	16.4	103
183	Design and synthesis of modular oxazoline ligands for the enantioselective chromium-catalyzed addition of allyl bromide to ketones. *Journal of the American Chemical Society*, **2007**, 129, 2752-3	16.4	102
182	Mechanistic investigations of the palladium-catalyzed aerobic oxidative kinetic resolution of secondary alcohols using (-)-sparteine. *Journal of the American Chemical Society*, **2003**, 125, 7005-13	16.4	102
181	A general and efficient catalyst system for a Wacker-type oxidation using TBHP as the terminal oxidant: application to classically challenging substrates. *Journal of the American Chemical Society*, **2009**, 131, 6076-7	16.4	101
180	Discovery of a practical direct O2-coupled Wacker oxidation with Pd[(-)-sparteine]Cl2. *Organic Letters*, **2006**, 8, 4117-20	6.2	100

179	Photophysics of 2SDeoxyuridine (dU) Nucleosides Covalently Substituted with Either 1-Pyrenyl or 1-Pyrenoyl: Observation of Pyrene-to-Nucleoside Charge-Transfer Emission in 5-(1-Pyrenyl)-dU. *Journal of the American Chemical Society*, **1995**, 117, 9119-9128	16.4	100
178	A palladium-catalyzed three-component-coupling strategy for the differential vicinal diarylation of terminal 1,3-dienes. *Organic Letters*, **2014**, 16, 4666-9	6.2	99
177	Systematically probing the effect of catalyst acidity in a hydrogen-bond-catalyzed enantioselective reaction. *Angewandte Chemie - International Edition*, **2007**, 46, 4748-50	16.4	96
176	Palladium(II)-catalyzed aerobic dialkoxylation of styrenes: a profound influence of an o-phenol. *Journal of the American Chemical Society*, **2006**, 128, 1460-1	16.4	94
175	Interrogating selectivity in catalysis using molecular vibrations. *Nature*, **2014**, 507, 210-4	50.4	91
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173	Development and Analysis of a Pd(0)-Catalyzed Enantioselective 1,1-Diarylation of Acrylates Enabled by Chiral Anion Phase Transfer. *Journal of the American Chemical Society*, **2016**, 138, 15877-15880	16.4	90
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171	Design of hydrogen bond catalysts based on a modular oxazoline template: application to an enantioselective hetero Diels-Alder reaction. *Organic Letters*, **2005**, 7, 5473-5	6.2	90
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169	Holistic prediction of enantioselectivity in asymmetric catalysis. *Nature*, **2019**, 571, 343-348	50.4	89
168	Palladium-catalyzed reductive coupling of styrenes and organostannanes under aerobic conditions. *Journal of the American Chemical Society*, **2007**, 129, 14193-5	16.4	89
167	Palladium-catalyzed hydroarylation of 1,3-dienes with boronic esters via reductive formation of pi-allyl palladium intermediates under oxidative conditions. *Journal of the American Chemical Society*, **2010**, 132, 10209-11	16.4	88
166	Palladium-catalyzed 1,1-difunctionalization of ethylene. *Journal of the American Chemical Society*, **2012**, 134, 11372-5	16.4	86
165	Hybrid enzymatic and organic electrocatalytic cascade for the complete oxidation of glycerol. *Journal of the American Chemical Society*, **2014**, 136, 15917-20	16.4	84
164	Palladium(II)-catalyzed aerobic hydroalkoxylation of styrenes containing a phenol. *Journal of the American Chemical Society*, **2006**, 128, 2794-5	16.4	83
163	High-Performance Oligomeric Catholytes for Effective Macromolecular Separation in Nonaqueous Redox Flow Batteries. *ACS Central Science*, **2018**, 4, 189-196	16.8	82
162	Investigating the nature of palladium chain-walking in the enantioselective redox-relay Heck reaction of alkenyl alcohols. *Journal of Organic Chemistry*, **2014**, 79, 11841-50	4.2	81

161	Quantitatively correlating the effect of ligand-substituent size in asymmetric catalysis using linear free energy relationships. *Angewandte Chemie - International Edition*, **2008**, 47, 771-4	16.4	80
160	Enantiodivergent Pd-catalyzed C-C bond formation enabled through ligand parameterization. *Science*, **2018**, 362, 670-674	33.3	80
159	Palladium-Catalyzed Enantioselective Redox-Relay Heck Arylation of 1,1-Disubstituted Homoallylic Alcohols. *Journal of the American Chemical Society*, **2016**, 138, 11461-4	16.4	78
158	Palladium(II)-catalyzed enantio- and diastereoselective synthesis of pyrrolidine derivatives. *Organic Letters*, **2012**, 14, 4074-7	6.2	78
157	Unusual reactivity of molecular oxygen with pi-allylnickel(N-heterocyclic carbene) chloride complexes. *Journal of the American Chemical Society*, **2003**, 125, 872-3	16.4	77
156	Examination of the role of Taft-type steric parameters in asymmetric catalysis. *Journal of Organic Chemistry*, **2009**, 74, 7633-43	4.2	76
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154	Predicting Electrocatalytic Properties: Modeling Structure-Activity Relationships of Nitroxyl Radicals. *Journal of the American Chemical Society*, **2015**, 137, 16179-86	16.4	75
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152	Stereochemical diversity in chiral ligand design: discovery and optimization of catalysts for the enantioselective addition of allylic halides to aldehydes. *Organic Letters*, **2005**, 7, 1837-9	6.2	73
151	Disparate Catalytic Scaffolds for Atroposelective Cyclodehydration. *Journal of the American Chemical Society*, **2019**, 141, 6698-6705	16.4	72
150	Predicting and optimizing asymmetric catalyst performance using the principles of experimental design and steric parameters. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 2179-83	11.5	72
149	Comparing quantitative prediction methods for the discovery of small-molecule chiral catalysts. *Nature Reviews Chemistry*, **2018**, 2, 290-305	34.6	72
148	Pd(II)-catalyzed oxidative 1,1-diarylation of terminal olefins. *Organic Letters*, **2010**, 12, 2848-51	6.2	71
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138	Quantitatively analyzing metathesis catalyst activity and structural features in silica-supported tungsten imido-alkylidene complexes. *Journal of the American Chemical Society*, **2015**, 137, 6699-704	16.4	66
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135	Palladium-catalyzed aerobic oxidative kinetic resolution of alcohols with an achiral exogenous base. *Journal of Organic Chemistry*, **2003**, 68, 7535-7	4.2	62
134	Catalytic Iron-Mediated [4 + 1] Cycloaddition of Diallenes with Carbon Monoxide. *Journal of the American Chemical Society*, **1996**, 118, 11783-11788	16.4	62
133	Modular synthesis of amine-functionalized oxazolines. *Organic Letters*, **2002**, 4, 3399-401	6.2	59
132	Mechanism-Based Design of a High-Potential Catholyte Enables a 3.2 V All-Organic Nonaqueous Redox Flow Battery. *Journal of the American Chemical Society*, **2019**, 141, 15301-15306	16.4	58
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130	Parameterization of Acyclic Diaminocarbene Ligands Applied to a Gold(I)-Catalyzed Enantioselective Tandem Rearrangement/Cyclization. *Journal of the American Chemical Society*, **2017**, 139, 12943-12946	16.4	57
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120	Steric effects in the aerobic oxidation of pi-allylnickel(II) complexes with N-heterocyclic carbenes. *Inorganic Chemistry*, **2006**, 45, 8430-41	5.1	52
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118	Palladium-catalyzed hydrofunctionalization of vinyl phenol derivatives with heteroaromatics. *Organic Letters*, **2011**, 13, 2774-7	6.2	51
117	Linear free-energy relationship analysis of a catalytic desymmetrization reaction of a diarylmethane-bis(phenol). *Organic Letters*, **2010**, 12, 2794-7	6.2	50
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115	Palladium-Catalyzed Enantioselective Redox-Relay Heck Alkynylation of Alkenols To Access Propargylic Stereocenters. *Angewandte Chemie - International Edition*, **2017**, 56, 6651-6654	16.4	48
114	Palladium-Catalyzed Enantioselective Relay Heck Arylation of Enelactams: Accessing □Unsaturated □Lactams. *Journal of the American Chemical Society*, **2018**, 140, 6527-6530	16.4	48
113	TEMPO-Modified Linear Poly(ethylenimine) for Immobilization-Enhanced Electrocatalytic Oxidation of Alcohols. *ACS Catalysis*, **2015**, 5, 5519-5524	13.1	47
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110	Catalytic Carbonyl-Olefin Metathesis of Aliphatic Ketones: Iron(III) Homo-Dimers as Lewis Acidic Superelectrophiles. *Journal of the American Chemical Society*, **2019**, 141, 1690-1700	16.4	44
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106	Conformational Dynamics in Asymmetric Catalysis: Is Catalyst Flexibility a Design Element?. *Synthesis*, **2019**, 51, 1021-1036	2.9	42
105	Development of a general Pd(II)-catalyzed intermolecular hydroalkoxylation reaction of vinylphenols by using a sacrificial alcohol as the hydride source. *Organic Letters*, **2006**, 8, 5557-60	6.2	41
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99	Parameterization and Analysis of Peptide-Based Catalysts for the Atroposelective Bromination of 3-Arylquinazolin-4(3H)-ones. *Journal of the American Chemical Society*, **2018**, 140, 868-871	16.4	38
98	Distinctive meta-directing group effect for iridium-catalyzed 1,1-diarylalkene enantioselective hydrogenation. *Organic Letters*, **2013**, 15, 646-9	6.2	38
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95	Predictive Multivariate Linear Regression Analysis Guides Successful Catalytic Enantioselective Minisci Reactions of Diazines. *Journal of the American Chemical Society*, **2019**, 141, 19178-19185	16.4	37
94	Diastereoselective synthesis of piperazines by manganese-mediated reductive cyclization. *Organic Letters*, **2003**, 5, 1591-4	6.2	37
93	Anti-Markovnikov hydroalkylation of allylic amine derivatives via a palladium-catalyzed reductive cross-coupling reaction. *Journal of the American Chemical Society*, **2011**, 133, 11454-7	16.4	36
92	Substrate Channeling in an Artificial Metabolon: A Molecular Dynamics Blueprint for an Experimental Peptide Bridge. *ACS Catalysis*, **2017**, 7, 2486-2493	13.1	33
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89	Developing a Predictive Solubility Model for Monomeric and Oligomeric Cyclopropenium-Based Flow Battery Catholytes. *Journal of the American Chemical Society*, **2019**, 141, 10171-10176	16.4	32
88	Inverting Conventional Chemoselectivity in Pd-Catalyzed Amine Arylations with Multiply Halogenated Pyridines. *Journal of the American Chemical Society*, **2017**, 139, 10613-10616	16.4	32
87	Palladium-Catalyzed Enantioselective Intermolecular Coupling of Phenols and Allylic Alcohols. *Journal of the American Chemical Society*, **2016**, 138, 15881-15884	16.4	31
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85	Enantioselective Allenoate-Claisen Rearrangement Using Chiral Phosphate Catalysts. *Journal of the American Chemical Society*, **2020**, 142, 6390-6399	16.4	28
84	Quantifying Structural Effects of Amino Acid Ligands in Pd(II)-Catalyzed Enantioselective CH Functionalization Reactions. *Organometallics*, **2018**, 37, 203-210	3.8	27
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