

David W C Macmillan

List of Publications by Year in descending order

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87
papers

32,234
citations

16437

64
h-index

46771

89
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97
all docs

97
docs citations

97
times ranked

13980
citing authors

#	ARTICLE	IF	CITATIONS
1	Visible Light Photoredox Catalysis with Transition Metal Complexes: Applications in Organic Synthesis. <i>Chemical Reviews</i> , 2013, 113, 5322-5363.	23.0	7,226
2	Photoredox Catalysis in Organic Chemistry. <i>Journal of Organic Chemistry</i> , 2016, 81, 6898-6926.	1.7	2,156
3	Merging Photoredox Catalysis with Organocatalysis: The Direct Asymmetric Alkylation of Aldehydes. <i>Science</i> , 2008, 322, 77-80.	6.0	2,023
4	The merger of transition metal and photocatalysis. <i>Nature Reviews Chemistry</i> , 2017, 1, .	13.8	1,591
5	Merging photoredox with nickel catalysis: Coupling of α -carboxyl sp^3 -carbons with aryl halides. <i>Science</i> , 2014, 345, 437-440.	6.0	1,309
6	Discovery of an α -Amino C-H Arylation Reaction Using the Strategy of Accelerated Serendipity. <i>Science</i> , 2011, 334, 1114-1117.	6.0	858
7	Metallaphotoredox: The Merger of Photoredox and Transition Metal Catalysis. <i>Chemical Reviews</i> , 2022, 122, 1485-1542.	23.0	660
8	Alcohols as alkylating agents in heteroarene C-H functionalization. <i>Nature</i> , 2015, 525, 87-90.	13.7	581
9	Native functionality in triple catalytic cross-coupling: sp^3 C-H bonds as latent nucleophiles. <i>Science</i> , 2016, 352, 1304-1308.	6.0	501
10	Photoredox Activation for the Direct α -Arylation of Ketones and Aldehydes. <i>Science</i> , 2013, 339, 1593-1596.	6.0	491
11	Enantioselective α -Benzoylation of Aldehydes via Photoredox Organocatalysis. <i>Journal of the American Chemical Society</i> , 2010, 132, 13600-13603.	6.6	480
12	Switching on elusive organometallic mechanisms with photoredox catalysis. <i>Nature</i> , 2015, 524, 330-334.	13.7	474
13	Carboxylic Acids as A Traceless Activation Group for Conjugate Additions: A Three-Step Synthesis of (α)-Pregabalin. <i>Journal of the American Chemical Society</i> , 2014, 136, 10886-10889.	6.6	472
14	Aryl amination using ligand-free Ni(II) salts and photoredox catalysis. <i>Science</i> , 2016, 353, 279-283.	6.0	472
15	Decarboxylative Arylation of α -Amino Acids via Photoredox Catalysis: A One-Step Conversion of Biomass to Drug Pharmacophore. <i>Journal of the American Chemical Society</i> , 2014, 136, 5257-5260.	6.6	463
16	Silyl Radical Activation of Alkyl Halides in Metallaphotoredox Catalysis: A Unique Pathway for Cross-Electrophile Coupling. <i>Journal of the American Chemical Society</i> , 2016, 138, 8084-8087.	6.6	463
17	The direct arylation of allylic sp^3 C-H bonds via organic and photoredox catalysis. <i>Nature</i> , 2015, 519, 74-77.	13.7	429
18	Enantioselective Decarboxylative Arylation of α -Amino Acids via the Merger of Photoredox and Nickel Catalysis. <i>Journal of the American Chemical Society</i> , 2016, 138, 1832-1835.	6.6	425

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19	Oâ€“H hydrogen bonding promotes H-atom transfer from Î± Câ€“H bonds for C-alkylation of alcohols. <i>Science</i> , 2015, 349, 1532-1536.	6.0	414
20	Photosensitized, energy transfer-mediated organometallic catalysis through electronically excited nickel(II). <i>Science</i> , 2017, 355, 380-385.	6.0	398
21	Selective sp ³ Câ€“H alkylation via polarity-match-based cross-coupling. <i>Nature</i> , 2017, 547, 79-83.	13.7	396
22	Photoredox-catalyzed deuteration and tritiation of pharmaceutical compounds. <i>Science</i> , 2017, 358, 1182-1187.	6.0	394
23	Enantioselective Organocatalytic Î±-Fluorination of Aldehydes. <i>Journal of the American Chemical Society</i> , 2005, 127, 8826-8828.	6.6	393
24	Merging Photoredox and Nickel Catalysis: Decarboxylative Cross-Coupling of Carboxylic Acids with Vinyl Halides. <i>Journal of the American Chemical Society</i> , 2015, 137, 624-627.	6.6	380
25	Photoredox Î±-Vinylation of Î±-Amino Acids and <i>N</i> -Aryl Amines. <i>Journal of the American Chemical Society</i> , 2014, 136, 11602-11605.	6.6	374
26	Direct arylation of strong aliphatic Câ€“H bonds. <i>Nature</i> , 2018, 560, 70-75.	13.7	373
27	Metallaphotoredox-catalysed sp ³ â€“sp ³ cross-coupling of carboxylic acids with alkyl halides. <i>Nature</i> , 2016, 536, 322-325.	13.7	347
28	Decarboxylative Fluorination of Aliphatic Carboxylic Acids via Photoredox Catalysis. <i>Journal of the American Chemical Society</i> , 2015, 137, 5654-5657.	6.6	320
29	A radical approach to the copper oxidative addition problem: Trifluoromethylation of bromoarenes. <i>Science</i> , 2018, 360, 1010-1014.	6.0	319
30	Oxalates as Activating Groups for Alcohols in Visible Light Photoredox Catalysis: Formation of Quaternary Centers by Redox-Neutral Fragment Coupling. <i>Journal of the American Chemical Society</i> , 2015, 137, 11270-11273.	6.6	304
31	Decarboxylative sp ³ Câ€“N coupling via dual copper and photoredox catalysis. <i>Nature</i> , 2018, 559, 83-88.	13.7	303
32	The Evolution of High-Throughput Experimentation in Pharmaceutical Development and Perspectives on the Future. <i>Organic Process Research and Development</i> , 2019, 23, 1213-1242.	1.3	279
33	Merging Photoredox and Nickel Catalysis: The Direct Synthesis of Ketones by the Decarboxylative Arylation of Î±-â€“Oxo Acids. <i>Angewandte Chemie - International Edition</i> , 2015, 54, 7929-7933.	7.2	276
34	Decarboxylative alkylation for site-selective bioconjugation of native proteins via oxidation potentials. <i>Nature Chemistry</i> , 2018, 10, 205-211.	6.6	272
35	A General Strategy for Organocatalytic Activation of Câ€“H Bonds via Photoredox Catalysis: Direct Arylation of Benzylic Ethers. <i>Journal of the American Chemical Society</i> , 2014, 136, 626-629.	6.6	254
36	Direct Aldehyde Câ€“H Arylation and Alkylation via the Combination of Nickel, Hydrogen Atom Transfer, and Photoredox Catalysis. <i>Journal of the American Chemical Society</i> , 2017, 139, 11353-11356.	6.6	229

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37	The merger of decatungstate and copper catalysis to enable aliphatic C(sp ³)â€“H trifluoromethylation. <i>Nature Chemistry</i> , 2020, 12, 459-467.	6.6	226
38	Enantioselective Organocatalysis Using SOMO Activation. <i>Science</i> , 2007, 316, 582-585.	6.0	200
39	Alcohols as Latent Coupling Fragments for Metallaphotoredox Catalysis: sp ³ â€“sp ² Cross-Coupling of Oxalates with Aryl Halides. <i>Journal of the American Chemical Society</i> , 2016, 138, 13862-13865.	6.6	196
40	A General Small-Scale Reactor To Enable Standardization and Acceleration of Photocatalytic Reactions. <i>ACS Central Science</i> , 2017, 3, 647-653.	5.3	195
41	Microenvironment mapping via Dexter energy transfer on immune cells. <i>Science</i> , 2020, 367, 1091-1097.	6.0	188
42	Copper-mediated synthesis of drug-like bicyclopentanes. <i>Nature</i> , 2020, 580, 220-226.	13.7	174
43	Mechanistic Analysis of Metallaphotoredox Câ€“N Coupling: Photocatalysis Initiates and Perpetuates Ni(I)/Ni(III) Coupling Activity. <i>Journal of the American Chemical Society</i> , 2020, 142, 15830-15841.	6.6	162
44	Metallaphotoredox-enabled deoxygenative arylation of alcohols. <i>Nature</i> , 2021, 598, 451-456.	13.7	159
45	Amine Î±-heteroarylation via photoredox catalysis: a homolytic aromatic substitution pathway. <i>Chemical Science</i> , 2014, 5, 4173-4178.	3.7	156
46	Direct, enantioselective Î±-alkylation of aldehydes using simple olefins. <i>Nature Chemistry</i> , 2017, 9, 1073-1077.	6.6	153
47	Selective Hydrogen Atom Abstraction through Induced Bond Polarization: Direct Î±-Arylation of Alcohols through Photoredox, HAT, and Nickel Catalysis. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 5369-5373.	7.2	151
48	Decarboxylative Trifluoromethylation of Aliphatic Carboxylic Acids. <i>Journal of the American Chemical Society</i> , 2018, 140, 6522-6526.	6.6	147
49	Enantioselective Î±-Alkylation of Aldehydes by Photoredox Organocatalysis: Rapid Access to Pharmacophore Fragments from Î²-Cyanoaldehydes. <i>Angewandte Chemie - International Edition</i> , 2015, 54, 9668-9672.	7.2	144
50	Metallaphotoredox-Catalyzed Cross-Electrophile C _{sp} ³ â€“C _{sp} ³ Coupling of Aliphatic Bromides. <i>Journal of the American Chemical Society</i> , 2018, 140, 17433-17438.	6.6	139
51	Sulfonamidation of Aryl and Heteroaryl Halides through Photosensitized Nickel Catalysis. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 3488-3492.	7.2	137
52	Metallaphotoredox Difluoromethylation of Aryl Bromides. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 12543-12548.	7.2	136
53	Cross-Electrophile Coupling of Unactivated Alkyl Chlorides. <i>Journal of the American Chemical Society</i> , 2020, 142, 11691-11697.	6.6	131
54	Spin-Center Shift-Enabled Direct Enantioselective Î±-Benzoylation of Aldehydes with Alcohols. <i>Journal of the American Chemical Society</i> , 2018, 140, 3322-3330.	6.6	129

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55	Decarboxylative Hydroalkylation of Alkynes. <i>Journal of the American Chemical Society</i> , 2018, 140, 5701-5705.	6.6	127
56	Copper-Catalyzed Trifluoromethylation of Alkyl Bromides. <i>Journal of the American Chemical Society</i> , 2019, 141, 6853-6858.	6.6	114
57	Transient Absorption Spectroscopy Offers Mechanistic Insights for an Iridium/Nickel-Catalyzed C=C O Coupling. <i>Journal of the American Chemical Society</i> , 2020, 142, 4555-4559.	6.6	110
58	Fragment Couplings via CO ₂ Extrusion and Recombination: Expansion of a Classic Bond-Forming Strategy via Metallaphotoredox. <i>Journal of the American Chemical Society</i> , 2015, 137, 11938-11941.	6.6	105
59	Decatungstate-Catalyzed C(sp ³)–H Sulfonylation: Rapid Access to Diverse Organosulfur Functionality. <i>Journal of the American Chemical Society</i> , 2021, 143, 9737-9743.	6.6	91
60	Site-Selective Functionalization of Methionine Residues via Photoredox Catalysis. <i>Journal of the American Chemical Society</i> , 2020, 142, 21260-21266.	6.6	82
61	Nontraditional Fragment Couplings of Alcohols and Carboxylic Acids: C(sp ³)–C(sp ³) Cross-Coupling via Radical Sorting. <i>Journal of the American Chemical Society</i> , 2022, 144, 6185-6192.	6.6	80
62	Static to inducibly dynamic stereocontrol: The convergent use of racemic β -substituted ketones. <i>Science</i> , 2020, 369, 1113-1118.	6.0	79
63	A Metallaphotoredox Strategy for the Cross-Electrophile Coupling of α -Chloro Carbonyls with Aryl Halides. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 14584-14588.	7.2	76
64	Catalyst-controlled oligomerization for the collective synthesis of polypyrroloindoline natural products. <i>Nature Chemistry</i> , 2017, 9, 1165-1169.	6.6	74
65	Site-selective tyrosine bioconjugation via photoredox catalysis for native-to-bioorthogonal protein transformation. <i>Nature Chemistry</i> , 2021, 13, 902-908.	6.6	74
66	A Unified Approach to Decarboxylative Halogenation of (Hetero)aryl Carboxylic Acids. <i>Journal of the American Chemical Society</i> , 2022, 144, 8296-8305.	6.6	67
67	The Application of Pulse Radiolysis to the Study of Ni(I) Intermediates in Ni-Catalyzed Cross-Coupling Reactions. <i>Journal of the American Chemical Society</i> , 2021, 143, 9332-9337.	6.6	65
68	Metallaphotoredox aryl and alkyl radiomethylation for PET ligand discovery. <i>Nature</i> , 2021, 589, 542-547.	13.7	64
69	A biomimetic S _H 2 cross-coupling mechanism for quaternary sp ³ -carbon formation. <i>Science</i> , 2021, 374, 1258-1263.	6.0	64
70	Open-Shell Fluorination of Alkyl Bromides: Unexpected Selectivity in a Silyl Radical-Mediated Chain Process. <i>Journal of the American Chemical Society</i> , 2019, 141, 20031-20036.	6.6	63
71	Accelerating reaction generality and mechanistic insight through additive mapping. <i>Science</i> , 2022, 376, 532-539.	6.0	61
72	A general N-alkylation platform via copper metallaphotoredox and silyl radical activation of alkyl halides. <i>Chem</i> , 2021, 7, 1827-1842.	5.8	57

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73	Decarboxylative Borylation and Cross-Coupling of (Hetero)aryl Acids Enabled by Copper Charge Transfer Catalysis. <i>Journal of the American Chemical Society</i> , 2022, 144, 6163-6172.	6.6	53
74	Rapid Optimization of Photoredox Reactions for Continuous-Flow Systems Using Microscale Batch Technology. <i>ACS Central Science</i> , 2021, 7, 1126-1134.	5.3	52
75	Selective Isomerization via Transient Thermodynamic Control: Dynamic Epimerization of <i>trans</i> to <i>cis</i> Diols. <i>Journal of the American Chemical Society</i> , 2022, 144, 93-98.	6.6	50
76	Sulfonamidation of Aryl and Heteroaryl Halides through Photosensitized Nickel Catalysis. <i>Angewandte Chemie</i> , 2018, 130, 3546-3550.	1.6	48
77	Metallaphotoredox Perfluoroalkylation of Organobromides. <i>Journal of the American Chemical Society</i> , 2020, 142, 19480-19486.	6.6	47
78	Deoxytrifluoromethylation of Alcohols. <i>Journal of the American Chemical Society</i> , 2022, 144, 11961-11968.	6.6	46
79	Selective Hydrogen Atom Abstraction through Induced Bond Polarization: Direct Arylation of Alcohols through Photoredox, HAT, and Nickel Catalysis. <i>Angewandte Chemie</i> , 2018, 130, 5467-5471.	1.6	42
80	¹ / ₄ Map-Red: Proximity Labeling by Red Light Photocatalysis. <i>Journal of the American Chemical Society</i> , 2022, 144, 6154-6162.	6.6	42
81	HARC as an open-shell strategy to bypass oxidative addition in Ullmann-Goldberg couplings. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 21058-21064.	3.3	36
82	Reactive intermediates for interactome mapping. <i>Chemical Society Reviews</i> , 2021, 50, 2911-2926.	18.7	35
83	Synthesis of Enantiopure Unnatural Amino Acids by Metallaphotoredox Catalysis. <i>Organic Process Research and Development</i> , 2021, 25, 1966-1973.	1.3	30
84	Decarboxylative Oxygenation via Photoredox Catalysis. <i>Israel Journal of Chemistry</i> , 2020, 60, 410-415.	1.0	29
85	Metallaphotoredox Difluoromethylation of Aryl Bromides. <i>Angewandte Chemie</i> , 2018, 130, 12723-12728.	1.6	28
86	A Metallaphotoredox Strategy for the Cross-Electrophile Coupling of Chloro Carbonyls with Aryl Halides. <i>Angewandte Chemie</i> , 2019, 131, 14726-14730.	1.6	19
87	Bioinspired Supercharging of Photoredox Catalysis for Applications in Energy and Chemical Manufacturing. <i>Accounts of Chemical Research</i> , 2022, 55, 1423-1434.	7.6	18