David W C Macmillan

List of Publications by Citations

92 papers	22,939 citations	58 h-index	97 g-index
97 ext. papers	27,357 ext. citations	22.7 avg, IF	7.85 L-index

#	Paper	IF	Citations
92	Visible light photoredox catalysis with transition metal complexes: applications in organic synthesis. *Chemical Reviews*, **2013**, 113, 5322-63	68.1	5576
91	Merging photoredox catalysis with organocatalysis: the direct asymmetric alkylation of aldehydes. *Science*, **2008**, 322, 77-80	33.3	1671
90	Photoredox Catalysis in Organic Chemistry. *Journal of Organic Chemistry*, **2016**, 81, 6898-926	4.2	1478
89	The merger of transition metal and photocatalysis. *Nature Reviews Chemistry*, **2017**, 1,	34.6	1087
88	Dual catalysis. Merging photoredox with nickel catalysis: coupling of α-carboxyl sp3-carbons with aryl halides. *Science*, **2014**, 345, 437-40	33.3	1058
87	Discovery of an α-amino C-H arylation reaction using the strategy of accelerated serendipity. *Science*, **2011**, 334, 1114-7	33.3	691
86	Alcohols as alkylating agents in heteroarene C-H functionalization. *Nature*, **2015**, 525, 87-90	50.4	455
85	Enantioselective α-benzylation of aldehydes via photoredox organocatalysis. *Journal of the American Chemical Society*, **2010**, 132, 13600-3	16.4	445
84	Photoredox activation for the direct β-arylation of ketones and aldehydes. *Science*, **2013**, 339, 1593-6	33.3	409
83	Carboxylic acids as a traceless activation group for conjugate additions: a three-step synthesis of (±)-pregabalin. *Journal of the American Chemical Society*, **2014**, 136, 10886-9	16.4	377
82	Decarboxylative arylation of α-amino acids via photoredox catalysis: a one-step conversion of biomass to drug pharmacophore. *Journal of the American Chemical Society*, **2014**, 136, 5257-60	16.4	370
81	Native functionality in triple catalytic cross-coupling: sp3 C-H bonds as latent nucleophiles. *Science*, **2016**, 352, 1304-8	33.3	369
80	Enantioselective organocatalytic alpha-fluorination of aldehydes. *Journal of the American Chemical Society*, **2005**, 127, 8826-8	16.4	358
79	Switching on elusive organometallic mechanisms with photoredox catalysis. *Nature*, **2015**, 524, 330-4	50.4	349
78	Enantioselective Decarboxylative Arylation of α-Amino Acids via the Merger of Photoredox and Nickel Catalysis. *Journal of the American Chemical Society*, **2016**, 138, 1832-5	16.4	349
77	Aryl amination using ligand-free Ni(II) salts and photoredox catalysis. *Science*, **2016**, 353, 279-83	33.3	335
76	The direct arylation of allylic sp(3) C-H bonds via organic and photoredox catalysis. *Nature*, **2015**, 519, 74-7	50.4	332

75	Merging photoredox and nickel catalysis: decarboxylative cross-coupling of carboxylic acids with vinyl halides. *Journal of the American Chemical Society*, **2015**, 137, 624-7	16.4	326
74	O-H hydrogen bonding promotes H-atom transfer from α C-H bonds for C-alkylation of alcohols. *Science*, **2015**, 349, 1532-6	33.3	299
73	Silyl Radical Activation of Alkyl Halides in Metallaphotoredox Catalysis: A Unique Pathway for Cross-Electrophile Coupling. *Journal of the American Chemical Society*, **2016**, 138, 8084-7	16.4	297
72	Photoredox α-vinylation of α-amino acids and N-aryl amines. *Journal of the American Chemical Society*, **2014**, 136, 11602-5	16.4	295
71	Selective sp C-H alkylation via polarity-match-based cross-coupling. *Nature*, **2017**, 547, 79-83	50.4	290
70	Metallaphotoredox-catalysed sp(3)-sp(3) cross-coupling of carboxylic acids with alkyl halides. *Nature*, **2016**, 536, 322-5	50.4	288
69	Photosensitized, energy transfer-mediated organometallic catalysis through electronically excited nickel(II). *Science*, **2017**, 355, 380-385	33.3	282
68	Photoredox-catalyzed deuteration and tritiation of pharmaceutical compounds. *Science*, **2017**, 358, 1182-1187	33.3	268
67	Decarboxylative Fluorination of Aliphatic Carboxylic Acids via Photoredox Catalysis. *Journal of the American Chemical Society*, **2015**, 137, 5654-7	16.4	260
66	Direct arylation of strong aliphatic C-H bonds. *Nature*, **2018**, 560, 70-75	50.4	250
65	Merging Photoredox and Nickel Catalysis: The Direct Synthesis of Ketones by the Decarboxylative Arylation of α-Oxo Acids. *Angewandte Chemie - International Edition*, **2015**, 54, 7929-33	16.4	229
64	Oxalates as Activating Groups for Alcohols in Visible Light Photoredox Catalysis: Formation of Quaternary Centers by Redox-Neutral Fragment Coupling. *Journal of the American Chemical Society*, **2015**, 137, 11270-11273	16.4	226
63	A radical approach to the copper oxidative addition problem: Trifluoromethylation of bromoarenes. *Science*, **2018**, 360, 1010-1014	33.3	220
62	A general strategy for organocatalytic activation of C-H bonds via photoredox catalysis: direct arylation of benzylic ethers. *Journal of the American Chemical Society*, **2014**, 136, 626-9	16.4	208
61	Decarboxylative sp C-N coupling via dual copper and photoredox catalysis. *Nature*, **2018**, 559, 83-88	50.4	197
60	Decarboxylative alkylation for site-selective bioconjugation of native proteins via oxidation potentials. *Nature Chemistry*, **2018**, 10, 205-211	17.6	185
59	Direct Aldehyde C-H Arylation and Alkylation via the Combination of Nickel, Hydrogen Atom Transfer, and Photoredox Catalysis. *Journal of the American Chemical Society*, **2017**, 139, 11353-11356	16.4	166
58	A General Small-Scale Reactor To Enable Standardization and Acceleration of Photocatalytic Reactions. *ACS Central Science*, **2017**, 3, 647-653	16.8	148

57	Alcohols as Latent Coupling Fragments for Metallaphotoredox Catalysis: sp-sp Cross-Coupling of Oxalates with Aryl Halides. *Journal of the American Chemical Society*, **2016**, 138, 13862-13865	16.4	139
56	Amine -heteroarylation photoredox catalysis: a homolytic aromatic substitution pathway. *Chemical Science*, **2014**, 5, 4173-4178	9.4	131
55	Photoredox Catalysis: A Mild, Operationally Simple Approach to the Synthesis of -Trifluoromethyl Carbonyl Compounds. *Angewandte Chemie*, **2011**, 123, 6243-6246	3.6	129
54	The Evolution of High-Throughput Experimentation in Pharmaceutical Development and Perspectives on the Future. *Organic Process Research and Development*, **2019**, 23, 1213-1242	3.9	128
53	Enantioselective -Alkylation of Aldehydes by Photoredox Organocatalysis: Rapid Access to Pharmacophore Fragments from Cyanoaldehydes. *Angewandte Chemie - International Edition*, **2015**, 54, 9668-72	16.4	119
52	The merger of decatungstate and copper catalysis to enable aliphatic C(sp)-H trifluoromethylation. *Nature Chemistry*, **2020**, 12, 459-467	17.6	116
51	Enantioselective Organocatalysis Using SOMO Activation. *Science*, **2007**, 316, 582-585	33.3	109
50	Selective Hydrogen Atom Abstraction through Induced Bond Polarization: Direct -Arylation of Alcohols through Photoredox, HAT, and Nickel Catalysis. *Angewandte Chemie - International Edition*, **2018**, 57, 5369-5373	16.4	107
49	Decarboxylative Trifluoromethylation of Aliphatic Carboxylic Acids. *Journal of the American Chemical Society*, **2018**, 140, 6522-6526	16.4	103
48	Direct, enantioselective -alkylation of aldehydes using simple olefins. *Nature Chemistry*, **2017**, 9, 1073-1077	17.6	101
47	Metallaphotoredox: The Merger of Photoredox and Transition Metal Catalysis. *Chemical Reviews*, **2021**,	68.1	97
46	Metallaphotoredox Difluoromethylation of Aryl Bromides. *Angewandte Chemie - International Edition*, **2018**, 57, 12543-12548	16.4	94
45	Fragment Couplings via CO2 Extrusion-Recombination: Expansion of a Classic Bond-Forming Strategy via Metallaphotoredox. *Journal of the American Chemical Society*, **2015**, 137, 11938-41	16.4	91
44	Sulfonamidation of Aryl and Heteroaryl Halides through Photosensitized Nickel Catalysis. *Angewandte Chemie - International Edition*, **2018**, 57, 3488-3492	16.4	87
43	Metallaphotoredox-Catalyzed Cross-Electrophile C-C Coupling of Aliphatic Bromides. *Journal of the American Chemical Society*, **2018**, 140, 17433-17438	16.4	85
42	Decarboxylative Hydroalkylation of Alkynes. *Journal of the American Chemical Society*, **2018**, 140, 5701-5705	16.4	82
41	Spin-Center Shift-Enabled Direct Enantioselective -Benzylation of Aldehydes with Alcohols. *Journal of the American Chemical Society*, **2018**, 140, 3322-3330	16.4	79
40	Microenvironment mapping via Dexter energy transfer on immune cells. *Science*, **2020**, 367, 1091-1097	33.3	73

39	Copper-Catalyzed Trifluoromethylation of Alkyl Bromides. *Journal of the American Chemical Society*, **2019**, 141, 6853-6858	16.4	71
38	Copper-mediated synthesis of drug-like bicyclopentanes. *Nature*, **2020**, 580, 220-226	50.4	70
37	Catalyst-controlled oligomerization for the collective synthesis of polypyrroloindoline natural products. *Nature Chemistry*, **2017**, 9, 1165-1169	17.6	62
36	Transient Absorption Spectroscopy Offers Mechanistic Insights for an Iridium/Nickel-Catalyzed C-O Coupling. *Journal of the American Chemical Society*, **2020**, 142, 4555-4559	16.4	60
35	Mechanistic Analysis of Metallaphotoredox C-N Coupling: Photocatalysis Initiates and Perpetuates Ni(I)/Ni(III) Coupling Activity. *Journal of the American Chemical Society*, **2020**, 142, 15830-15841	16.4	59
34	Cross-Electrophile Coupling of Unactivated Alkyl Chlorides. *Journal of the American Chemical Society*, **2020**, 142, 11691-11697	16.4	55
33	A Metallaphotoredox Strategy for the Cross-Electrophile Coupling of -Chloro Carbonyls with Aryl Halides. *Angewandte Chemie - International Edition*, **2019**, 58, 14584-14588	16.4	45
32	Sulfonamidation of Aryl and Heteroaryl Halides through Photosensitized Nickel Catalysis. *Angewandte Chemie*, **2018**, 130, 3546-3550	3.6	35
31	Metallaphotoredox-enabled deoxygenative arylation of alcohols. *Nature*, **2021**, 598, 451-456	50.4	35
30	Metallaphotoredox aryl and alkyl radiomethylation for PET ligand discovery. *Nature*, **2021**, 589, 542-547	50.4	34
29	Selective Hydrogen Atom Abstraction through Induced Bond Polarization: Direct -Arylation of Alcohols through Photoredox, HAT, and Nickel Catalysis. *Angewandte Chemie*, **2018**, 130, 5467-5471	3.6	32
28	Static to inducibly dynamic stereocontrol: The convergent use of racemic substituted ketones. *Science*, **2020**, 369, 1113-1118	33.3	32
27	Open-Shell Fluorination of Alkyl Bromides: Unexpected Selectivity in a Silyl Radical-Mediated Chain Process. *Journal of the American Chemical Society*, **2019**, 141, 20031-20036	16.4	32
26	Site-Selective Functionalization of Methionine Residues via Photoredox Catalysis. *Journal of the American Chemical Society*, **2020**, 142, 21260-21266	16.4	29
25	Enantioselective Total Synthesis of (+)-Minovincine in Nine Chemical Steps: An Approach to Ketone Activation in Cascade Catalysis. *Angewandte Chemie*, **2013**, 125, 11479-11482	3.6	21
24	Site-selective tyrosine bioconjugation via photoredox catalysis for native-to-bioorthogonal protein transformation. *Nature Chemistry*, **2021**, 13, 902-908	17.6	21
23	Decatungstate-Catalyzed C()-H Sulfinylation: Rapid Access to Diverse Organosulfur Functionality. *Journal of the American Chemical Society*, **2021**, 143, 9737-9743	16.4	20
22	Metallaphotoredox Perfluoroalkylation of Organobromides. *Journal of the American Chemical Society*, **2020**, 142, 19480-19486	16.4	17

21	Metallaphotoredox Difluoromethylation of Aryl Bromides. *Angewandte Chemie*, **2018**, 130, 12723-12728	3.6	16
20	HARC as an open-shell strategy to bypass oxidative addition in Ullmann-Goldberg couplings. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 21058-21064	11.5	16
19	A biomimetic S2 cross-coupling mechanism for quaternary sp-carbon formation. *Science*, **2021**, 374, 1258-1263	33.3	15
18	A General -alkylation Platform via Copper Metallaphotoredox and Silyl Radical Activation of Alkyl Halides. *CheM*, **2021**, 7, 1827-1842	16.2	14
17	Rapid Optimization of Photoredox Reactions for Continuous-Flow Systems Using Microscale Batch Technology. *ACS Central Science*, **2021**, 7, 1126-1134	16.8	13
16	A Metallaphotoredox Strategy for the Cross-Electrophile Coupling of □-Chloro Carbonyls with Aryl Halides. *Angewandte Chemie*, **2019**, 131, 14726-14730	3.6	11
15	The Application of Pulse Radiolysis to the Study of Ni(I) Intermediates in Ni-Catalyzed Cross-Coupling Reactions. *Journal of the American Chemical Society*, **2021**, 143, 9332-9337	16.4	11
14	Accelerating reaction generality and mechanistic insight through additive mapping.. *Science*, **2022**, 376, 532-539	33.3	11
13	Nontraditional Fragment Couplings of Alcohols and Carboxylic Acids: C()-C() Cross-Coupling via Radical Sorting.. *Journal of the American Chemical Society*, **2022**,	16.4	10
12	Selective Isomerization via Transient Thermodynamic Control: Dynamic Epimerization of to Diols.. *Journal of the American Chemical Society*, **2021**,	16.4	9
11	Decarboxylative Oxygenation via Photoredox Catalysis. *Israel Journal of Chemistry*, **2020**, 60, 410-415	3.4	9
10	Synthesis of Enantiopure Unnatural Amino Acids by Metallaphotoredox Catalysis. *Organic Process Research and Development*, **2021**, 25, 1966-1973	3.9	6
9	Small molecule photocatalysis enables drug target identification via energy transfer		6
8	Map-Red: Proximity Labeling by Red Light Photocatalysis.. *Journal of the American Chemical Society*, **2022**,	16.4	6
7	Reactive intermediates for interactome mapping. *Chemical Society Reviews*, **2021**, 50, 2911-2926	58.5	5
6	Asymmetric Organocatalysis37-117		4
5	Enantioselective Organo-SOMO Catalysis: a Novel Activation Mode for Asymmetric Synthesis **2013**, 87-94		3
4	Ligand-to-Copper Charge Transfer: A General Catalytic Approach to Aromatic Decarboxylative Functionalization		3

3 Tracking chromatin state changes using μMap photo-proximity labeling 3

2 Decarboxylative sp3 C–N Coupling via Dual Copper/Photoredox Catalysis 2

1 Carbon–Carbon Bond Formation by Metallaphotoredox Catalysis **2019**, 471-546