# David W C Macmillan

## List of Publications by Year in Descending Order



| | | | |
|---|---|---|---|
| 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 | 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 |
| 91 | Map-Red: Proximity Labeling by Red Light Photocatalysis.. *Journal of the American Chemical Society*, **2022**, | 16.4 | 6 |
| 90 | Accelerating reaction generality and mechanistic insight through additive mapping.. *Science*, **2022**, 376, 532-539 | 33.3 | 11 |
| 89 | Selective Isomerization via Transient Thermodynamic Control: Dynamic Epimerization of to Diols.. *Journal of the American Chemical Society*, **2021**, | 16.4 | 9 |
| 88 | Metallaphotoredox: The Merger of Photoredox and Transition Metal Catalysis. *Chemical Reviews*, **2021**, | 68.1 | 97 |
| 87 | A biomimetic S2 cross-coupling mechanism for quaternary sp-carbon formation. *Science*, **2021**, 374, 1258-1263 | 33.3 | 15 |
| 86 | Metallaphotoredox aryl and alkyl radiomethylation for PET ligand discovery. *Nature*, **2021**, 589, 542-547 | 50.4 | 34 |
| 85 | Site-selective tyrosine bioconjugation via photoredox catalysis for native-to-bioorthogonal protein transformation. *Nature Chemistry*, **2021**, 13, 902-908 | 17.6 | 21 |
| 84 | Rapid Optimization of Photoredox Reactions for Continuous-Flow Systems Using Microscale Batch Technology. *ACS Central Science*, **2021**, 7, 1126-1134 | 16.8 | 13 |
| 83 | Decatungstate-Catalyzed C()-H Sulfinylation: Rapid Access to Diverse Organosulfur Functionality. *Journal of the American Chemical Society*, **2021**, 143, 9737-9743 | 16.4 | 20 |
| 82 | 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 |
| 81 | Synthesis of Enantiopure Unnatural Amino Acids by Metallaphotoredox Catalysis. *Organic Process Research and Development*, **2021**, 25, 1966-1973 | 3.9 | 6 |
| 80 | A General -alkylation Platform via Copper Metallaphotoredox and Silyl Radical Activation of Alkyl Halides. *CheM*, **2021**, 7, 1827-1842 | 16.2 | 14 |
| 79 | Metallaphotoredox-enabled deoxygenative arylation of alcohols. *Nature*, **2021**, 598, 451-456 | 50.4 | 35 |
| 78 | Reactive intermediates for interactome mapping. *Chemical Society Reviews*, **2021**, 50, 2911-2926 | 58.5 | 5 |
| 77 | Site-Selective Functionalization of Methionine Residues via Photoredox Catalysis. *Journal of the American Chemical Society*, **2020**, 142, 21260-21266 | 16.4 | 29 |
| 76 | Metallaphotoredox Perfluoroalkylation of Organobromides. *Journal of the American Chemical Society*, **2020**, 142, 19480-19486 | 16.4 | 17 |

| | | | |
|---|---|---|---|
| 75 | Cross-Electrophile Coupling of Unactivated Alkyl Chlorides. *Journal of the American Chemical Society*, **2020**, 142, 11691-11697 | 16.4 | 55 |
| 74 | The merger of decatungstate and copper catalysis to enable aliphatic C(sp)-H trifluoromethylation. *Nature Chemistry*, **2020**, 12, 459-467 | 17.6 | 116 |
| 73 | Microenvironment mapping via Dexter energy transfer on immune cells. *Science*, **2020**, 367, 1091-1097 | 33.3 | 73 |
| 72 | Copper-mediated synthesis of drug-like bicyclopentanes. *Nature*, **2020**, 580, 220-226 | 50.4 | 70 |
| 71 | 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 |
| 70 | Decarboxylative Oxygenation via Photoredox Catalysis. *Israel Journal of Chemistry*, **2020**, 60, 410-415 | 3.4 | 9 |
| 69 | 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 |
| 68 | 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 |
| 67 | Static to inducibly dynamic stereocontrol: The convergent use of racemic □-substituted ketones. *Science*, **2020**, 369, 1113-1118 | 33.3 | 32 |
| 66 | 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 |
| 65 | Copper-Catalyzed Trifluoromethylation of Alkyl Bromides. *Journal of the American Chemical Society*, **2019**, 141, 6853-6858 | 16.4 | 71 |
| 64 | 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 |
| 63 | Carbon□Carbon Bond Formation by Metallaphotoredox Catalysis **2019**, 471-546 | | |
| 62 | A Metallaphotoredox Strategy for the Cross-Electrophile Coupling of □-Chloro Carbonyls with Aryl Halides. *Angewandte Chemie*, **2019**, 131, 14726-14730 | 3.6 | 11 |
| 61 | 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 |
| 60 | 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 |
| 59 | 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 |
| 58 | Decarboxylative Hydroalkylation of Alkynes. *Journal of the American Chemical Society*, **2018**, 140, 5701-5705 | 16.4 | 82 |

| | | | |
|---|---|---|---|
| 57 | Spin-Center Shift-Enabled Direct Enantioselective α-Benzylation of Aldehydes with Alcohols. *Journal of the American Chemical Society*, **2018**, 140, 3322-3330 | 16.4 | 79 |
| 56 | Sulfonamidation of Aryl and Heteroaryl Halides through Photosensitized Nickel Catalysis. *Angewandte Chemie*, **2018**, 130, 3546-3550 | 3.6 | 35 |
| 55 | Sulfonamidation of Aryl and Heteroaryl Halides through Photosensitized Nickel Catalysis. *Angewandte Chemie - International Edition*, **2018**, 57, 3488-3492 | 16.4 | 87 |
| 54 | Metallaphotoredox Difluoromethylation of Aryl Bromides. *Angewandte Chemie - International Edition*, **2018**, 57, 12543-12548 | 16.4 | 94 |
| 53 | Direct arylation of strong aliphatic C-H bonds. *Nature*, **2018**, 560, 70-75 | 50.4 | 250 |
| 52 | Metallaphotoredox Difluoromethylation of Aryl Bromides. *Angewandte Chemie*, **2018**, 130, 12723-12728 | 3.6 | 16 |
| 51 | Decarboxylative Trifluoromethylation of Aliphatic Carboxylic Acids. *Journal of the American Chemical Society*, **2018**, 140, 6522-6526 | 16.4 | 103 |
| 50 | Decarboxylative sp C-N coupling via dual copper and photoredox catalysis. *Nature*, **2018**, 559, 83-88 | 50.4 | 197 |
| 49 | Decarboxylative alkylation for site-selective bioconjugation of native proteins via oxidation potentials. *Nature Chemistry*, **2018**, 10, 205-211 | 17.6 | 185 |
| 48 | Metallaphotoredox-Catalyzed Cross-Electrophile C-C Coupling of Aliphatic Bromides. *Journal of the American Chemical Society*, **2018**, 140, 17433-17438 | 16.4 | 85 |
| 47 | A radical approach to the copper oxidative addition problem: Trifluoromethylation of bromoarenes. *Science*, **2018**, 360, 1010-1014 | 33.3 | 220 |
| 46 | Photosensitized, energy transfer-mediated organometallic catalysis through electronically excited nickel(II). *Science*, **2017**, 355, 380-385 | 33.3 | 282 |
| 45 | A General Small-Scale Reactor To Enable Standardization and Acceleration of Photocatalytic Reactions. *ACS Central Science*, **2017**, 3, 647-653 | 16.8 | 148 |
| 44 | Selective sp C-H alkylation via polarity-match-based cross-coupling. *Nature*, **2017**, 547, 79-83 | 50.4 | 290 |
| 43 | Catalyst-controlled oligomerization for the collective synthesis of polypyrroloindoline natural products. *Nature Chemistry*, **2017**, 9, 1165-1169 | 17.6 | 62 |
| 42 | 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 |
| 41 | Photoredox-catalyzed deuteration and tritiation of pharmaceutical compounds. *Science*, **2017**, 358, 1182-1187 | 33.3 | 268 |
| 40 | Direct, enantioselective α-alkylation of aldehydes using simple olefins. *Nature Chemistry*, **2017**, 9, 1073-1077 | 17.6 | 101 |

| | | | |
|---|---|---|---|
| 39 | The merger of transition metal and photocatalysis. *Nature Reviews Chemistry*, **2017**, 1, | 34.6 | 1087 |
| 38 | Metallaphotoredox-catalysed sp(3)-sp(3) cross-coupling of carboxylic acids with alkyl halides. *Nature*, **2016**, 536, 322-5 | 50.4 | 288 |
| 37 | 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 |
| 36 | Aryl amination using ligand-free Ni(II) salts and photoredox catalysis. *Science*, **2016**, 353, 279-83 | 33.3 | 335 |
| 35 | Enantioselective Decarboxylative Arylation of □-Amino Acids via the Merger of Photoredox and Nickel Catalysis. *Journal of the American Chemical Society*, **2016**, 138, 1832-5 | 16.4 | 349 |
| 34 | Native functionality in triple catalytic cross-coupling: sp□C-H bonds as latent nucleophiles. *Science*, **2016**, 352, 1304-8 | 33.3 | 369 |
| 33 | 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 |
| 32 | Photoredox Catalysis in Organic Chemistry. *Journal of Organic Chemistry*, **2016**, 81, 6898-926 | 4.2 | 1478 |
| 31 | The direct arylation of allylic sp(3) C-H bonds via organic and photoredox catalysis. *Nature*, **2015**, 519, 74-7 | 50.4 | 332 |
| 30 | Decarboxylative Fluorination of Aliphatic Carboxylic Acids via Photoredox Catalysis. *Journal of the American Chemical Society*, **2015**, 137, 5654-7 | 16.4 | 260 |
| 29 | Switching on elusive organometallic mechanisms with photoredox catalysis. *Nature*, **2015**, 524, 330-4 | 50.4 | 349 |
| 28 | O-H hydrogen bonding promotes H-atom transfer from □ C-H bonds for C-alkylation of alcohols. *Science*, **2015**, 349, 1532-6 | 33.3 | 299 |
| 27 | 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 |
| 26 | Alcohols as alkylating agents in heteroarene C-H functionalization. *Nature*, **2015**, 525, 87-90 | 50.4 | 455 |
| 25 | 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 |
| 24 | Merging Photoredox and Nickel Catalysis: The Direct Synthesis of Ketones by the Decarboxylative Arylation of □-Oxo Acids. *Angewandte Chemie - International Edition*, **2015**, 54, 7929-33 | 16.4 | 229 |
| 23 | 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 |
| 22 | 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 |

| | | | |
|---|---|---|---|
| 21 | 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 |
| 20 | 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 |
| 19 | Amine α-heteroarylation photoredox catalysis: a homolytic aromatic substitution pathway. *Chemical Science*, **2014**, 5, 4173-4178 | 9.4 | 131 |
| 18 | Photoredox α-vinylation of α-amino acids and N-aryl amines. *Journal of the American Chemical Society*, **2014**, 136, 11602-5 | 16.4 | 295 |
| 17 | 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 |
| 16 | Dual catalysis. Merging photoredox with nickel catalysis: coupling of α-carboxyl sp³-carbons with aryl halides. *Science*, **2014**, 345, 437-40 | 33.3 | 1058 |
| 15 | Visible light photoredox catalysis with transition metal complexes: applications in organic synthesis. *Chemical Reviews*, **2013**, 113, 5322-63 | 68.1 | 5576 |
| 14 | Photoredox activation for the direct β-arylation of ketones and aldehydes. *Science*, **2013**, 339, 1593-6 | 33.3 | 409 |
| 13 | Enantioselective Organo-SOMO Catalysis: a Novel Activation Mode for Asymmetric Synthesis **2013**, 87-94 | | 3 |
| 12 | 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 |
| 11 | Discovery of an α-amino C-H arylation reaction using the strategy of accelerated serendipity. *Science*, **2011**, 334, 1114-7 | 33.3 | 691 |
| 10 | Photoredox Catalysis: A Mild, Operationally Simple Approach to the Synthesis of α-Trifluoromethyl Carbonyl Compounds. *Angewandte Chemie*, **2011**, 123, 6243-6246 | 3.6 | 129 |
| 9 | Enantioselective α-benzylation of aldehydes via photoredox organocatalysis. *Journal of the American Chemical Society*, **2010**, 132, 13600-3 | 16.4 | 445 |
| 8 | Merging photoredox catalysis with organocatalysis: the direct asymmetric alkylation of aldehydes. *Science*, **2008**, 322, 77-80 | 33.3 | 1671 |
| 7 | Enantioselective Organocatalysis Using SOMO Activation. *Science*, **2007**, 316, 582-585 | 33.3 | 109 |
| 6 | Enantioselective organocatalytic alpha-fluorination of aldehydes. *Journal of the American Chemical Society*, **2005**, 127, 8826-8 | 16.4 | 358 |
| 5 | Asymmetric Organocatalysis37-117 | | 4 |
| 4 | Decarboxylative sp3 C–N Coupling via Dual Copper/Photoredox Catalysis | | 2 |

# List of Publications

| | | |
|---|---|---|
| 3 | Ligand-to-Copper Charge Transfer: A General Catalytic Approach to Aromatic Decarboxylative Functionalization | 5 |
| 2 | Small molecule photocatalysis enables drug target identification via energy transfer | 6 |
| 1 | Tracking chromatin state changes using Map photo-proximity labeling | 3 |