

Frances H Arnold

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

302
papers

30,548
citations

96
h-index

165
g-index

334
ext. papers

34,703
ext. citations

12.2
avg, IF

7.93
L-index

#	Paper	IF	Citations
302	Combining chemistry and protein engineering for new-to-nature biocatalysis. <i>2022</i> , 1, 18-23		9
301	Biocatalytic One-Carbon Ring Expansion of Aziridines to Azetidines via a Highly Enantioselective [1,2]-Stevens Rearrangement.. <i>Journal of the American Chemical Society</i> , 2022 ,	16.4	5
300	Engineering Enzymes for New-to-Nature Carbene Chemistry 2022 , 95-138		1
299	An Enzymatic Platform for Primary Amination of 1-Aryl-2-alkyl Alkynes.. <i>Journal of the American Chemical Society</i> , 2021 ,	16.4	8
298	Dual-function enzyme catalysis for enantioselective carbon-nitrogen bond formation. <i>Nature Chemistry</i> , 2021 , 13, 1166-1172	17.6	10
297	Origin and Control of Chemoselectivity in Cytochrome Catalyzed Carbene Transfer into Si-H and N-H bonds. <i>Journal of the American Chemical Society</i> , 2021 , 143, 7114-7123	16.4	4
296	Biocatalytic Transformations of Silicon-the Other Group 14 Element. <i>ACS Central Science</i> , 2021 , 7, 944-953	13.8	6
295	New-to-nature chemistry from old protein machinery: carbene and nitrene transferases. <i>Current Opinion in Biotechnology</i> , 2021 , 69, 43-51	11.4	19
294	Tryptophan Synthase: Biocatalyst Extraordinaire. <i>ChemBioChem</i> , 2021 , 22, 5-16	3.8	18
293	Navigating the Unnatural Reaction Space: Directed Evolution of Heme Proteins for Selective Carbene and Nitrene Transfer. <i>Accounts of Chemical Research</i> , 2021 , 54, 1209-1225	24.3	49
292	Advances in machine learning for directed evolution. <i>Current Opinion in Structural Biology</i> , 2021 , 69, 11-18	18.1	20
291	Informed training set design enables efficient machine learning-assisted directed protein evolution. <i>Cell Systems</i> , 2021 , 12, 1026-1045.e7	10.6	9
290	Asymmetric Alkylation of Ketones Catalyzed by Engineered TrpB. <i>Angewandte Chemie - International Edition</i> , 2021 , 60, 21412-21417	16.4	1
289	Asymmetric Alkylation of Ketones Catalyzed by Engineered TrpB. <i>Angewandte Chemie</i> , 2021 , 133, 21582-21587	15.7	1
288	Biocatalytic, Intermolecular C-H Bond Functionalization for the Synthesis of Enantioenriched Amides. <i>Angewandte Chemie - International Edition</i> , 2021 , 60, 24864-24869	16.4	9
287	Protein sequence design with deep generative models. <i>Current Opinion in Chemical Biology</i> , 2021 , 65, 18-27	9.7	15
286	Scalable continuous evolution for the generation of diverse enzyme variants encompassing promiscuous activities. <i>Nature Communications</i> , 2020 , 11, 5644	17.4	14

285	Diversity-Oriented Enzymatic Synthesis of Cyclopropane Building Blocks. <i>ACS Catalysis</i> , 2020 , 10, 7112-7116	11.6	22
284	Selective Enzymatic Oxidation of Silanes to Silanols. <i>Angewandte Chemie - International Edition</i> , 2020 , 59, 15507-15511	16.4	23
283	Engineering Cytochrome P450s for Enantioselective Cyclopropanation of Internal Alkynes. <i>Journal of the American Chemical Society</i> , 2020 , 142, 6891-6895	16.4	37
282	Signal Peptides Generated by Attention-Based Neural Networks. <i>ACS Synthetic Biology</i> , 2020 , 9, 2154-2161	11.7	25
281	Engineering new catalytic activities in enzymes. <i>Nature Catalysis</i> , 2020 , 3, 203-213	36.5	230
280	Selective Enzymatic Oxidation of Silanes to Silanols. <i>Angewandte Chemie</i> , 2020 , 132, 15637-15641	3.6	6
279	Enzymatic Lactone-Carbene C-H Insertion to Build Contiguous Chiral Centers. <i>ACS Catalysis</i> , 2020 , 10, 5393-5398	13.1	20
278	Enzymatic Primary Amination of Benzylic and Allylic C(sp)-H Bonds. <i>Journal of the American Chemical Society</i> , 2020 , 142, 10279-10283	16.4	61
277	Nature's Machinery, Repurposed: Expanding the Repertoire of Iron-Dependent Oxygenases. <i>ACS Catalysis</i> , 2020 , 10, 12239-12255	13.1	20
276	High Throughput Screening with SAMDI Mass Spectrometry for Directed Evolution. <i>Journal of the American Chemical Society</i> , 2020 , 142, 19804-19808	16.4	4
275	Direct Enzymatic Synthesis of a Deep-Blue Fluorescent Noncanonical Amino Acid from Azulene and Serine. <i>ChemBioChem</i> , 2020 , 21, 80-83	3.8	12
274	A Biocatalytic Platform for Synthesis of Chiral Trifluoromethylated Organoborons. <i>ACS Central Science</i> , 2019 , 5, 270-276	16.8	51
273	Enantiodivergent α -Amino C-H Fluoroalkylation Catalyzed by Engineered Cytochrome P450s. <i>Journal of the American Chemical Society</i> , 2019 , 141, 9798-9802	16.4	60
272	Directed Evolution of a Cytochrome P450 Carbene Transferase for Selective Functionalization of Cyclic Compounds. <i>Journal of the American Chemical Society</i> , 2019 , 141, 8989-8995	16.4	65
271	Site-selective enzymatic C-H amidation for synthesis of diverse lactams. <i>Science</i> , 2019 , 364, 575-578	33.3	41
270	Machine learning-assisted directed protein evolution with combinatorial libraries. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 8852-8858	11.5	183
269	Engineering Chemoselectivity in Hemoprotein-Catalyzed Indole Amidation. <i>ACS Catalysis</i> , 2019 , 9, 8271-8275	8.75	24
268	Nitroalkanes as Versatile Nucleophiles for Enzymatic Synthesis of Noncanonical Amino Acids. <i>ACS Catalysis</i> , 2019 , 9, 8726-8730	13.1	16

267	Innovation by Evolution: Bringing New Chemistry to Life (Nobel Lecture). <i>Angewandte Chemie - International Edition</i> , 2019 , 58, 14420-14426	16.4	174
266	Machine-learning-guided directed evolution for protein engineering. <i>Nature Methods</i> , 2019 , 16, 687-694	21.6	255
265	An enzymatic platform for the asymmetric amination of primary, secondary and tertiary C(sp)-H bonds. <i>Nature Chemistry</i> , 2019 , 11, 987-993	17.6	84
264	Innovation durch Evolution: Wie man neue Chemie zum Leben erweckt (Nobel-Vortrag). <i>Angewandte Chemie</i> , 2019 , 131, 14558-14565	3.6	19
263	Enzymes by Evolution: Bringing New Chemistry to Life 2019 , 47-67		1
262	Tailoring Tryptophan Synthase TrpB for Selective Quaternary Carbon Bond Formation. <i>Journal of the American Chemical Society</i> , 2019 , 141, 19817-19822	16.4	26
261	Nitrene Transfer Catalyzed by a Non-Heme Iron Enzyme and Enhanced by Non-Native Small-Molecule Ligands. <i>Journal of the American Chemical Society</i> , 2019 , 141, 19585-19588	16.4	18
260	Machine learning-guided channelrhodopsin engineering enables minimally invasive optogenetics. <i>Nature Methods</i> , 2019 , 16, 1176-1184	21.6	65
259	Enantioselective Aminohydroxylation of Styrenyl Olefins Catalyzed by an Engineered Hemoprotein. <i>Angewandte Chemie - International Edition</i> , 2019 , 58, 3138-3142	16.4	66
258	Enzymatic assembly of carbon-carbon bonds via iron-catalysed sp C-H functionalization. <i>Nature</i> , 2019 , 565, 67-72	50.4	145
257	Enantioselective Aminohydroxylation of Styrenyl Olefins Catalyzed by an Engineered Hemoprotein. <i>Angewandte Chemie</i> , 2019 , 131, 3170-3174	3.6	15
256	Engineered Cytochrome -Catalyzed Lactone-Carbene B-H Insertion. <i>Synlett</i> , 2019 , 30, 378-382	2.2	16
255	Selective CH bond functionalization with engineered heme proteins: new tools to generate complexity. <i>Current Opinion in Chemical Biology</i> , 2019 , 49, 67-75	9.7	72
254	Diverse Engineered Heme Proteins Enable Stereodivergent Cyclopropanation of Unactivated Alkenes. <i>ACS Central Science</i> , 2018 , 4, 372-377	16.8	80
253	Stereoselective Enzymatic Synthesis of Heteroatom-Substituted Cyclopropanes. <i>ACS Catalysis</i> , 2018 , 8, 2629-2634	13.1	68
252	Enzymatic construction of highly strained carbocycles. <i>Science</i> , 2018 , 360, 71-75	33.3	134
251	Innentitelbild: Gerichtete Evolution: Wie man neue Chemie zum Leben erweckt (Angew. Chem. 16/2018). <i>Angewandte Chemie</i> , 2018 , 130, 4172-4172	3.6	
250	Directed Evolution of Artificial Metalloenzymes: Bridging Synthetic Chemistry and Biology 2018 , 137-170		3

249	Improved Synthesis of 4-Cyanotryptophan and Other Tryptophan Analogues in Aqueous Solvent Using Variants of TrpB from <i>Thermotoga maritima</i> . <i>Journal of Organic Chemistry</i> , 2018 , 83, 7447-7452	4.2	36
248	Directed Evolution Mimics Allosteric Activation by Stepwise Tuning of the Conformational Ensemble. <i>Journal of the American Chemical Society</i> , 2018 , 140, 7256-7266	16.4	47
247	Learned protein embeddings for machine learning. <i>Bioinformatics</i> , 2018 , 34, 2642-2648	7.2	105
246	Directed Evolution: Bringing New Chemistry to Life. <i>Angewandte Chemie - International Edition</i> , 2018 , 57, 4143-4148	16.4	470
245	Chemistry Takes a Bath: Reactions in Aqueous Media. <i>Journal of Organic Chemistry</i> , 2018 , 83, 7319-7322	4.2	65
244	Enzyme Nicotinamide Cofactor Specificity Reversal Guided by Automated Structural Analysis and Library Design. <i>Methods in Molecular Biology</i> , 2018 , 1671, 15-26	1.4	4
243	Gerichtete Evolution: Wie man neue Chemie zum Leben erweckt. <i>Angewandte Chemie</i> , 2018 , 130, 4212-4218	4.2	60
242	Engineering enzymes for noncanonical amino acid synthesis. <i>Chemical Society Reviews</i> , 2018 , 47, 8980-8987	9.5	57
241	Alternate Heme Ligation Steers Activity and Selectivity in Engineered Cytochrome P450-Catalyzed Carbene-Transfer Reactions. <i>Journal of the American Chemical Society</i> , 2018 , 140, 16402-16407	16.4	75
240	Engineered Biosynthesis of β -Alkyl Tryptophan Analogues. <i>Angewandte Chemie</i> , 2018 , 130, 14980-14984	3.6	12
239	Engineered Biosynthesis of β -Alkyl Tryptophan Analogues. <i>Angewandte Chemie - International Edition</i> , 2018 , 57, 14764-14768	16.4	35
238	Catalytic iron-carbene intermediate revealed in a cytochrome carbene transferase. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018 , 115, 7308-7313	11.5	69
237	Directed Evolution of an Allosteric Tryptophan Synthase to Create a Platform for Synthesis of Noncanonical Amino Acids 2017 , 1-16		
236	Structure-guided SCHEMA recombination generates diverse chimeric channelrhodopsins. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, E2624-E2633	11.5	37
235	Directed Evolution of a Bright Near-Infrared Fluorescent Rhodopsin Using a Synthetic Chromophore. <i>Cell Chemical Biology</i> , 2017 , 24, 415-425	8.2	46
234	Enantioselective, intermolecular benzylic C-H amination catalysed by an engineered iron-haem enzyme. <i>Nature Chemistry</i> , 2017 , 9, 629-634	17.6	239
233	Design and evolution of enzymes for non-natural chemistry. <i>Current Opinion in Green and Sustainable Chemistry</i> , 2017 , 7, 23-30	7.9	115
232	Anti-Markovnikov alkene oxidation by metal-oxo-mediated enzyme catalysis. <i>Science</i> , 2017 , 358, 215-218	3.3	108

231	Machine learning to design integral membrane channelrhodopsins for efficient eukaryotic expression and plasma membrane localization. <i>PLoS Computational Biology</i> , 2017 , 13, e1005786	5	59
230	Enantioselective Total Synthesis of Nigelladine A via Late-Stage C-H Oxidation Enabled by an Engineered P450 Enzyme. <i>Journal of the American Chemical Society</i> , 2017 , 139, 10196-10199	16.4	78
229	Exploiting and engineering hemoproteins for abiological carbene and nitrene transfer reactions. <i>Current Opinion in Biotechnology</i> , 2017 , 47, 102-111	11.4	180
228	Genetically programmed chiral organoborane synthesis. <i>Nature</i> , 2017 , 552, 132-136	50.4	170
227	Unlocking Reactivity of TrpB: A General Biocatalytic Platform for Synthesis of Tryptophan Analogues. <i>Journal of the American Chemical Society</i> , 2017 , 139, 10769-10776	16.4	59
226	A General Tool for Engineering the NAD/NADP Cofactor Preference of Oxidoreductases. <i>ACS Synthetic Biology</i> , 2017 , 6, 326-333	5.7	71
225	Identification of Mechanism-Based Inactivation in P450-Catalyzed Cyclopropanation Facilitates Engineering of Improved Enzymes. <i>Journal of the American Chemical Society</i> , 2016 , 138, 12527-33	16.4	43
224	Directed evolution of cytochrome c for carbon-silicon bond formation: Bringing silicon to life. <i>Science</i> , 2016 , 354, 1048-1051	33.3	345
223	A Panel of TrpB Biocatalysts Derived from Tryptophan Synthase through the Transfer of Mutations that Mimic Allosteric Activation. <i>Angewandte Chemie</i> , 2016 , 128, 11749-11753	3.6	10
222	Enhancement of cellulosome-mediated deconstruction of cellulose by improving enzyme thermostability. <i>Biotechnology for Biofuels</i> , 2016 , 9, 164	7.8	35
221	Highly Stereoselective Biocatalytic Synthesis of Key Cyclopropane Intermediate to Ticagrelor. <i>ACS Catalysis</i> , 2016 , 6, 7810-7813	13.1	53
220	Asymmetric Enzymatic Synthesis of Allylic Amines: A Sigmatropic Rearrangement Strategy. <i>Angewandte Chemie</i> , 2016 , 128, 4789-4793	3.6	17
219	Discovery of a regioselectivity switch in nitrating P450s guided by molecular dynamics simulations and Markov models. <i>Nature Chemistry</i> , 2016 , 8, 419-25	17.6	74
218	Exploring the Mechanism Responsible for Cellulase Thermostability by Structure-Guided Recombination. <i>PLoS ONE</i> , 2016 , 11, e0147485	3.7	22
217	Artificial domain duplication replicates evolutionary history of ketol-acid reductoisomerases. <i>Protein Science</i> , 2016 , 25, 1241-8	6.3	4
216	Asymmetric Enzymatic Synthesis of Allylic Amines: A Sigmatropic Rearrangement Strategy. <i>Angewandte Chemie - International Edition</i> , 2016 , 55, 4711-5	16.4	52
215	Synthesis of Branched Tryptophan Analogues Using an Engineered Subunit of Tryptophan Synthase. <i>Journal of the American Chemical Society</i> , 2016 , 138, 8388-91	16.4	51
214	Tryptophan Synthase Uses an Atypical Mechanism To Achieve Substrate Specificity. <i>Biochemistry</i> , 2016 , 55, 7043-7046	3.2	15

213	A Panel of TrpB Biocatalysts Derived from Tryptophan Synthase through the Transfer of Mutations that Mimic Allosteric Activation. <i>Angewandte Chemie - International Edition</i> , 2016 , 55, 11577-81	16.4	46
212	Genetically Encoded Spy Peptide Fusion System to Detect Plasma Membrane-Localized Proteins In Vivo. <i>Chemistry and Biology</i> , 2015 , 22, 1108-21		45
211	Enantioselective Enzyme-Catalyzed Aziridination Enabled by Active-Site Evolution of a Cytochrome P450. <i>ACS Central Science</i> , 2015 , 1, 89-93	16.8	122
210	Chemomimetic biocatalysis: exploiting the synthetic potential of cofactor-dependent enzymes to create new catalysts. <i>Journal of the American Chemical Society</i> , 2015 , 137, 13992-4006	16.4	99
209	Structural Adaptability Facilitates Histidine Heme Ligation in a Cytochrome P450. <i>Journal of the American Chemical Society</i> , 2015 , 137, 13861-5	16.4	27
208	Directed evolution of the tryptophan synthase Esubunit for stand-alone function recapitulates allosteric activation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 14599-604	11.5	82
207	P450BM3-Axial Mutations: A Gateway to Non-Natural Reactivity. <i>Israel Journal of Chemistry</i> , 2015 , 55, 14-20	3.4	29
206	The nature of chemical innovation: new enzymes by evolution. <i>Quarterly Reviews of Biophysics</i> , 2015 , 48, 404-10	7	67
205	Cofactor specificity motifs and the induced fit mechanism in class I ketol-acid reductoisomerases. <i>Biochemical Journal</i> , 2015 , 468, 475-84	3.8	16
204	Recent advances in engineering microbial rhodopsins for optogenetics. <i>Current Opinion in Structural Biology</i> , 2015 , 33, 8-15	8.1	42
203	Directed evolution of <i>Gloeobacter violaceus</i> rhodopsin spectral properties. <i>Journal of Molecular Biology</i> , 2015 , 427, 205-20	6.5	58
202	Ausdehnung des Enzym-Universums: Zugang zu nicht-natürlichen Reaktionen durch mechanismusgeleitete, gerichtete Evolution. <i>Angewandte Chemie</i> , 2015 , 127, 3408-3426	3.6	72
201	Expanding the enzyme universe: accessing non-natural reactions by mechanism-guided directed evolution. <i>Angewandte Chemie - International Edition</i> , 2015 , 54, 3351-67	16.4	334
200	Expanding P450 catalytic reaction space through evolution and engineering. <i>Current Opinion in Chemical Biology</i> , 2014 , 19, 126-34	9.7	112
199	Isobutanol production at elevated temperatures in thermophilic <i>Geobacillus thermoglucosidasius</i> . <i>Metabolic Engineering</i> , 2014 , 24, 1-8	9.7	82
198	Improved cyclopropanation activity of histidine-ligated cytochrome P450 enables the enantioselective formal synthesis of levomilnacipran. <i>Angewandte Chemie - International Edition</i> , 2014 , 53, 6810-3	16.4	146
197	Synthetic biology: Engineering explored. <i>Nature</i> , 2014 , 509, 166-7	50.4	32
196	Non-natural olefin cyclopropanation catalyzed by diverse cytochrome P450s and other hemoproteins. <i>ChemBioChem</i> , 2014 , 15, 2556-62	3.8	40

195	Synthesis of bioactive protein hydrogels by genetically encoded SpyTag-SpyCatcher chemistry. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014 , 111, 11269-74	11.5	174
194	P450-catalyzed asymmetric cyclopropanation of electron-deficient olefins under aerobic conditions. <i>Catalysis Science and Technology</i> , 2014 , 4, 3640-3643	5.5	48
193	Enzyme-controlled nitrogen-atom transfer enables regiodivergent C-H amination. <i>Journal of the American Chemical Society</i> , 2014 , 136, 15505-8	16.4	122
192	Cytochrome P450-Catalyzed Insertion of Carbenoids into N-H Bonds. <i>Chemical Science</i> , 2014 , 5, 598-601	9.4	137
191	Archaeorhodopsin variants with enhanced voltage-sensitive fluorescence in mammalian and <i>Caenorhabditis elegans</i> neurons. <i>Nature Communications</i> , 2014 , 5, 4894	17.4	101
190	Engineered thermostable fungal cellulases exhibit efficient synergistic cellulose hydrolysis at elevated temperatures. <i>Biotechnology and Bioengineering</i> , 2014 , 111, 2390-7	4.9	41
189	Structural, functional, and spectroscopic characterization of the substrate scope of the novel nitrating cytochrome P450 TxtE. <i>ChemBioChem</i> , 2014 , 15, 2259-67	3.8	29
188	Directed evolution of a far-red fluorescent rhodopsin. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014 , 111, 13034-9	11.5	65
187	Improved Cyclopropanation Activity of Histidine-Ligated Cytochrome P450 Enables the Enantioselective Formal Synthesis of Levomilnacipran. <i>Angewandte Chemie</i> , 2014 , 126, 6928-6931	3.6	56
186	Enantioselective imidation of sulfides via enzyme-catalyzed intermolecular nitrogen-atom transfer. <i>Journal of the American Chemical Society</i> , 2014 , 136, 8766-71	16.4	92
185	Designing libraries of chimeric proteins using SCHEMA recombination and RASPP. <i>Methods in Molecular Biology</i> , 2014 , 1179, 335-43	1.4	8
184	Noncontiguous SCHEMA protein recombination. <i>Methods in Molecular Biology</i> , 2014 , 1179, 345-52	1.4	3
183	Enantioselective intramolecular C-H amination catalyzed by engineered cytochrome P450 enzymes in vitro and in vivo. <i>Angewandte Chemie - International Edition</i> , 2013 , 52, 9309-12	16.4	203
182	Enantioselective Intramolecular C-H Amination Catalyzed by Engineered Cytochrome P450 Enzymes In Vitro and In Vivo. <i>Angewandte Chemie</i> , 2013 , 125, 9479-9482	3.6	52
181	Olefin cyclopropanation via carbene transfer catalyzed by engineered cytochrome P450 enzymes. <i>Science</i> , 2013 , 339, 307-10	33.3	556
180	Chimeragenesis of distantly-related proteins by noncontiguous recombination. <i>Protein Science</i> , 2013 , 22, 231-8	6.3	26
179	Innovation by homologous recombination. <i>Current Opinion in Chemical Biology</i> , 2013 , 17, 902-9	9.7	27
178	Efficient sampling of SCHEMA chimera families to identify useful sequence elements. <i>Methods in Enzymology</i> , 2013 , 523, 351-68	1.7	16

177	Hypocrea jecorina cellobiohydrolase I stabilizing mutations identified using noncontiguous recombination. <i>ACS Synthetic Biology</i> , 2013 , 2, 690-6	5.7	17
176	A serine-substituted P450 catalyzes highly efficient carbene transfer to olefins in vivo. <i>Nature Chemical Biology</i> , 2013 , 9, 485-7	11.7	244
175	Engineered thermostable fungal Cel6A and Cel7A cellobiohydrolases hydrolyze cellulose efficiently at elevated temperatures. <i>Biotechnology and Bioengineering</i> , 2013 , 110, 1874-83	4.9	96
174	General approach to reversing ketol-acid reductoisomerase cofactor dependence from NADPH to NADH. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, 10946-51	11.5	81
173	Navigating the protein fitness landscape with Gaussian processes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, E193-201	11.5	153
172	A diverse set of family 48 bacterial glycoside hydrolase cellulases created by structure-guided recombination. <i>FEBS Journal</i> , 2012 , 279, 4453-65	5.7	34
171	SCHEMA-designed variants of human Arginase I and II reveal sequence elements important to stability and catalysis. <i>ACS Synthetic Biology</i> , 2012 , 1, 221-8	5.7	44
170	Structure-guided directed evolution of highly selective p450-based magnetic resonance imaging sensors for dopamine and serotonin. <i>Journal of Molecular Biology</i> , 2012 , 422, 245-62	6.5	34
169	Utilizing Terminal Oxidants to Achieve P450-Catalyzed Oxidation of Methane. <i>Advanced Synthesis and Catalysis</i> , 2012 , 354, 964-968	5.6	38
168	Random field model reveals structure of the protein recombinational landscape. <i>PLoS Computational Biology</i> , 2012 , 8, e1002713	5	8
167	Comparison of random mutagenesis and semi-rational designed libraries for improved cytochrome P450 BM3-catalyzed hydroxylation of small alkanes. <i>Protein Engineering, Design and Selection</i> , 2012 , 25, 171-8	1.9	68
166	Highly thermostable fungal cellobiohydrolase I (Cel7A) engineered using predictive methods. <i>Protein Engineering, Design and Selection</i> , 2012 , 25, 827-33	1.9	52
165	Protein Engineering by Structure-Guided SCHEMA Recombination 2011 , 481-492		1
164	Enzymatic functionalization of carbon-hydrogen bonds. <i>Chemical Society Reviews</i> , 2011 , 40, 2003-21	58.5	257
163	Cytochrome P450: taming a wild type enzyme. <i>Current Opinion in Biotechnology</i> , 2011 , 22, 809-17	11.4	223
162	Engineered Bacterial Mimics of Human Drug Metabolizing Enzyme CYP2C9. <i>ChemCatChem</i> , 2011 , 3, 1065-1071	5.1	30
161	Improved product-per-glucose yields in P450-dependent propane biotransformations using engineered Escherichia coli. <i>Biotechnology and Bioengineering</i> , 2011 , 108, 500-10	4.9	47
160	The Library of Maynard-Smith: My Search for Meaning in the Protein Universe. <i>Microbe Magazine</i> , 2011 , 6, 316-318		5

159	Efficient screening of fungal cellobiohydrolase class I enzymes for thermostabilizing sequence blocks by SCHEMA structure-guided recombination. <i>Protein Engineering, Design and Selection</i> , 2010 , 23, 871-80	1.9	83
158	Consensus protein design without phylogenetic bias. <i>Journal of Molecular Biology</i> , 2010 , 399, 541-6	6.5	62
157	Combinatorial alanine substitution enables rapid optimization of cytochrome P450BM3 for selective hydroxylation of large substrates. <i>ChemBioChem</i> , 2010 , 11, 2502-5	3.8	88
156	A family of thermostable fungal cellulases created by structure-guided recombination. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009 , 106, 5610-5	11.5	218
155	In vivo evolution of butane oxidation by terminal alkane hydroxylases AlkB and CYP153A6. <i>Applied and Environmental Microbiology</i> , 2009 , 75, 337-44	4.8	68
154	SCHEMA recombination of a fungal cellulase uncovers a single mutation that contributes markedly to stability. <i>Journal of Biological Chemistry</i> , 2009 , 284, 26229-33	5.4	99
153	Chemoenzymatic elaboration of monosaccharides using engineered cytochrome P450BM3 demethylases. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009 , 106, 16550-5	11.5	80
152	Response to Goldman and Brown: Making sense of microbial consortia using ecology and evolution. <i>Trends in Biotechnology</i> , 2009 , 27, 4	15.1	8
151	A panel of cytochrome P450 BM3 variants to produce drug metabolites and diversify lead compounds. <i>Chemistry - A European Journal</i> , 2009 , 15, 11723-9	4.8	115
150	Chemo-enzymatic fluorination of unactivated organic compounds. <i>Nature Chemical Biology</i> , 2009 , 5, 26-8	11.7	114
149	Exploring protein fitness landscapes by directed evolution. <i>Nature Reviews Molecular Cell Biology</i> , 2009 , 10, 866-76	48.7	653
148	Directed enzyme evolution: climbing fitness peaks one amino acid at a time. <i>Current Opinion in Chemical Biology</i> , 2009 , 13, 3-9	9.7	249
147	Catalysts on Demand: Selective Oxidations by Laboratory-Evolved Cytochrome P450 BM3. <i>Chimia</i> , 2009 , 63, 309-312	1.3	54
146	Engineering microbial consortia: a new frontier in synthetic biology. <i>Trends in Biotechnology</i> , 2008 , 26, 483-9	15.1	657
145	Evolutionary history of a specialized p450 propane monooxygenase. <i>Journal of Molecular Biology</i> , 2008 , 383, 1069-80	6.5	168
144	A synthetic Escherichia coli predator-prey ecosystem. <i>Molecular Systems Biology</i> , 2008 , 4, 187	12.2	344
143	Neutral genetic drift can alter promiscuous protein functions, potentially aiding functional evolution. <i>Biology Direct</i> , 2007 , 2, 17	7.2	125
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