Jianbo Wang

List of Publications by Year
in descending order

119 papers	11,723 citations	23567 58 h-index	28297 105 g-index
129 all docs	129 docs citations	129 times ranked	6673 citing authors

#	Article	IF	Citations
1	Iterative saturation mutagenesis (ISM) for rapid directed evolution of functional enzymes. Nature Protocols, 2007, 2, 891-903.	12.0	686
2	Biocatalysis in Organic Chemistry and Biotechnology: Past, Present, and Future. Journal of the American Chemical Society, 2013, 135, 12480-12496.	13.7	646
3	Laboratory Evolution of Stereoselective Enzymes: A Prolific Source of Catalysts for Asymmetric Reactions. Angewandte Chemie - International Edition, 2011, 50, 138-174.	13.8	484
4	Iterative Saturation Mutagenesis on the Basis of B Factors as a Strategy for Increasing Protein Thermostability. Angewandte Chemie - International Edition, 2006, 45, 7745-7751.	13.8	423
5	Addressing the Numbers Problem in Directed Evolution. ChemBioChem, 2008, 9, 1797-1804.	2.6	374
6	Creation of Enantioselective Biocatalysts for Organic Chemistry by In Vitro Evolution. Angewandte Chemie International Edition in English, 1997, 36, 2830-2832.	4.4	359
7	Regio- and stereoselectivity of P450-catalysed hydroxylation of steroids controlled by laboratory evolution. Nature Chemistry, 2011, 3, 738-743.	13.6	347
8	Catalytic Cascade Reactions Involving Metal Carbene Migratory Insertion. ACS Catalysis, 2013, 3, 2586-2598.	11.2	342
9	Utility of B-Factors in Protein Science: Interpreting Rigidity, Flexibility, and Internal Motion and Engineering Thermostability. Chemical Reviews, 2019, 119, 1626-1665.	47.7	317
10	Asymmetric Catalysis Special Feature Part II: Controlling the enantioselectivity of enzymes by directed evolution: Practical and theoretical ramifications. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 5716-5722.	7.1	312
11	Directed Evolution of Enantioselective Enzymes: Iterative Cycles of CASTing for Probing Protein-Sequence Space. Angewandte Chemie - International Edition, 2006, 45, 1236-1241.	13.8	302
12	The Crucial Role of Methodology Development in Directed Evolution of Selective Enzymes. Angewandte Chemie - International Edition, 2020, 59, 13204-13231.	13.8	278
13	Iterative Saturation Mutagenesis Accelerates Laboratory Evolution of Enzyme Stereoselectivity: Rigorous Comparison with Traditional Methods. Journal of the American Chemical Society, 2010, 132, 9144-9152.	13.7	204
14	Directed Evolution of an Enantioselective Enzyme through Combinatorial Multiple-Cassette Mutagenesis. Angewandte Chemie - International Edition, 2001, 40, 3589.	13.8	194
15	Copperâ€"Phthalocyanine Conjugates of Serum Albumins as Enantioselective Catalysts in Dielsâ€"Alder Reactions. Angewandte Chemie - International Edition, 2006, 45, 2416-2419.	13.8	191
16	Directed evolution of hybrid enzymes: Evolving enantioselectivity of an achiral Rh-complex anchored to a protein. Chemical Communications, 2006, , 4318.	4.1	169
17	Directed Evolution as a Method To Create Enantioselective Cyclohexanone Monooxygenases for Catalysis in Baeyerâ€"Villiger Reactions. Angewandte Chemie - International Edition, 2004, 43, 4075-4078.	13.8	161
18	The Importance of Additive and Nonâ€Additive Mutational Effects in Protein Engineering. Angewandte Chemie - International Edition, 2013, 52, 2658-2666.	13.8	155

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19	Enantioselective Enzymes for Organic Synthesis Created by Directed Evolution. Chemistry - A European Journal, 2000, 6, 407-412.	3.3	143
20	Increasing the stability of an enzyme toward hostile organic solvents by directed evolution based on iterative saturation mutagenesis using the B-FIT method. Chemical Communications, 2010, 46, 8657.	4.1	143
21	Directed Evolution of an Enantioselective Epoxide Hydrolase: Uncovering the Source of Enantioselectivity at Each Evolutionary Stage. Journal of the American Chemical Society, 2009, 131, 7334-7343.	13.7	141
22	Expanding the toolbox of organic chemists: directed evolution of P450 monooxygenases as catalysts in regio- and stereoselective oxidative hydroxylation. Chemical Communications, 2015, 51, 2208-2224.	4.1	135
23	Laboratory Evolution of Enantiocomplementary Candida antarctica Lipase B Mutants with Broad Substrate Scope. Journal of the American Chemical Society, 2013, 135, 1872-1881.	13.7	134
24	Improved PCR method for the creation of saturation mutagenesis libraries in directed evolution: application to difficult-to-amplify templates. Applied Microbiology and Biotechnology, 2008, 81, 387-397.	3.6	130
25	P450-Catalyzed Regio- and Diastereoselective Steroid Hydroxylation: Efficient Directed Evolution Enabled by Mutability Landscaping. ACS Catalysis, 2018, 8, 3395-3410.	11.2	128
26	Directed evolution of selective enzymes and hybrid catalysts. Tetrahedron, 2002, 58, 6595-6602.	1.9	127
27	Expanding the Substrate Scope of Enzymes: Combining Mutations Obtained by CASTing. Chemistry - A European Journal, 2006, 12, 6031-6038.	3.3	126
28	An Artificial Metalloenzyme: Creation of a Designed Copper Binding Site in a Thermostable Protein. Angewandte Chemie - International Edition, 2010, 49, 5151-5155.	13.8	122
29	Catalytic Asymmetric Reduction of Difficult-to-Reduce Ketones: Triple-Code Saturation Mutagenesis of an Alcohol Dehydrogenase. ACS Catalysis, 2016, 6, 1598-1605.	11.2	121
30	Learning from Directed Evolution: Further Lessons from Theoretical Investigations into Cooperative Mutations in Lipase Enantioselectivity. ChemBioChem, 2007, 8, 106-112.	2.6	107
31	Recent advances in transition-metal-catalyzed synthesis of conjugated enynes. Organic and Biomolecular Chemistry, 2016, 14, 6638-6650.	2.8	107
32	Stereodivergent Protein Engineering of a Lipase To Access All Possible Stereoisomers of Chiral Esters with Two Stereocenters. Journal of the American Chemical Society, 2019, 141, 7934-7945.	13.7	106
33	Designing New Baeyerâ˘Villiger Monooxygenases Using Restricted CASTing. Journal of Organic Chemistry, 2006, 71, 8431-8437.	3.2	104
34	Reshaping an Enzyme Binding Pocket for Enhanced and Inverted Stereoselectivity: Use of Smallest Amino Acid Alphabets in Directed Evolution. Angewandte Chemie - International Edition, 2015, 54, 12410-12415.	13.8	103
35	Achieving Regioâ€•and Enantioselectivity of P450â€Catalyzed Oxidative CH Activation of Small Functionalized Molecules by Structureâ€Guided Directed Evolution. ChemBioChem, 2012, 13, 1465-1473.	2.6	100
36	A machine learning approach for reliable prediction of amino acid interactions and its application in the directed evolution of enantioselective enzymes. Scientific Reports, 2018, 8, 16757.	3.3	94

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37	Directed Evolution of Artificial Metalloenzymes: A Universal Means to Tune the Selectivity of Transition Metal Catalysts?. Accounts of Chemical Research, 2019, 52, 336-344.	15.6	92
38	Manipulating the Stereoselectivity of Limonene Epoxide Hydrolase by Directed Evolution Based on Iterative Saturation Mutagenesis. Journal of the American Chemical Society, 2010, 132, 15744-15751.	13.7	90
39	Quantum Mechanical/Molecular Mechanical Study on the Mechanism of the Enzymatic Baeyerâ€“Villiger Reaction. Journal of the American Chemical Society, 2012, 134, 2732-2741.	13.7	90
40	Iterative Saturation Mutagenesis: A Powerful Approach to Engineer Proteins by Systematically Simulating Darwinian Evolution. Methods in Molecular Biology, 2014, 1179, 103-128.	0.9	89
41	Learning from Directed Evolution: Theoretical Investigations into Cooperative Mutations in Lipase Enantioselectivity. ChemBioChem, 2004, 5, 214-223.	2.6	88
42	Simultaneous engineering of an enzyme's entrance tunnel and active site: the case of monoamine oxidase MAO-N. Chemical Science, 2017, 8, 4093-4099.	7.4	88
43	Can Machine Learning Revolutionize Directed Evolution of Selective Enzymes?. Advanced Synthesis and Catalysis, 2019, 361, 2377-2386.	4.3	87
44	Regioâ€•and Stereoselective Steroid Hydroxylation at C7 by Cytochromeâ€…P450 Monooxygenase Mutants. Angewandte Chemie - International Edition, 2020, 59, 12499-12505.	13.8	83
45	Enzymatic site-selectivity enabled by structure-guided directed evolution. Chemical Communications, 2017, 53, 3916-3928.	4.1	81
46	Many Pathways in Laboratory Evolution Can Lead to Improved Enzymes: How to Escape from Local Minima. ChemBioChem, 2012, 13, 1060-1066.	2.6	79
47	What are the Limitations of Enzymes in Synthetic Organic Chemistry?. Chemical Record, 2016, 16, 2449-2459.	5.8	79
48	Wholeâ€Cellâ€Catalyzed Multiple Regioâ€•and Stereoselective Functionalizations in Cascade Reactions Enabled by Directed Evolution. Angewandte Chemie - International Edition, 2016, 55, 12026-12029.	13.8	79
49	Induced Axial Chirality in Biocatalytic Asymmetric Ketone Reduction. Journal of the American Chemical Society, 2013, 135, 1665-1668.	13.7	75
50	New Concepts for Increasing the Efficiency in Directed Evolution of Stereoselective Enzymes. Chemistry - A European Journal, 2016, 22, 5046-5054.	3.3	74
51	Pervasive cooperative mutational effects on multiple catalytic enzyme traits emerge via long-range conformational dynamics. Nature Communications, 2021, 12, 1621.	12.8	72
52	Shedding light on the efficacy of laboratory evolution based on iterative saturation mutagenesis. Molecular BioSystems, 2009, 5, 115-122.	2.9	69
53	A Robust Protein Host for Anchoring Chelating Ligands and Organocatalysts. ChemBioChem, 2008, 9, 552-564.	2.6	67
54	Extreme Synergistic Mutational Effects in the Directed Evolution of a Baeyerâ€“Villiger Monooxygenase as Catalyst for Asymmetric Sulfoxidation. Journal of the American Chemical Society, 2014, 136, 17262-17272.	13.7	66

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55	Artificial cysteine-lipases with high activity and altered catalytic mechanism created by laboratory evolution. Nature Communications, 2019, 10, 3198.	12.8	66
56	Multiparameter Optimization in Directed Evolution: Engineering Thermostability, Enantioselectivity, and Activity of an Epoxide Hydrolase. ACS Catalysis, 2016, 6, 3679-3687.	11.2	65
57	Cytochrome P450 Catalyzed Oxidative Hydroxylation of Achiral Organic Compounds with Simultaneous Creation of Two Chirality Centers in a Single Cï£¿H Activation Step. Angewandte Chemie - International Edition, 2014, 53, 8659-8663.	13.8	63
58	Copper(I)â€Catalyzed Threeâ€Component Coupling of <i>N</i>â€Tosylhydrazones, Alkynes and Azides: Synthesis of Trisubstituted 1,2,3â€Triazoles. Advanced Synthesis and Catalysis, 2015, 357, 2277-2286.	4.3	62
59	Enhancing the Thermal Robustness of an Enzyme by Directed Evolution: Least Favorable Starting Points and Inferior Mutants Can Map Superior Evolutionary Pathways. ChemBioChem, 2011, 12, 2502-2510.	2.6	58
60	Protein Engineering of Stereoselective Baeyerâ€"Villiger Monooxygenases. Chemistry - A European Journal, 2012, 18, 10160-10172.	3.3	56
61	Directed evolution of stereoselective enzymes based on genetic selection as opposed to screening systems. Journal of Biotechnology, 2014, 191, 3-10.	3.8	56
62	Economical analysis of saturation mutagenesis experiments. Scientific Reports, 2015, 5, 10654.	3.3	53
63	Biophysical characterization of mutants of <i>Bacillus subtilis</i> lipase evolved for thermostability: Factors contributing to increased activity retention. Protein Science, 2012, 21, 487-497.	7.6	49
64	Focused rational iterative site-specific mutagenesis (FRISM). Methods in Enzymology, 2020, 643, 225-242.	1.0	48
65	Directed Evolution by Using Iterative Saturation Mutagenesis Based on Multiresidue Sites. ChemBioChem, 2013, 14, 2301-2309.	2.6	47
66	Enhancing the Efficiency of Directed Evolution in Focused Enzyme Libraries by the Adaptive Substituent Reordering Algorithm. Chemistry - A European Journal, 2012, 18, 5646-5654.	3.3	46
67	Speeding up Directed Evolution: Combining the Advantages of Solid-Phase Combinatorial Gene Synthesis with Statistically Guided Reduction of Screening Effort. ACS Synthetic Biology, 2015, 4, 317-331.	3.8	46
68	Creation of an Amino Acid Network of Structurally Coupled Residues in the Directed Evolution of a Thermostable Enzyme. Angewandte Chemie - International Edition, 2009, 48, 8268-8272.	13.8	44
69	A redox-mediated Kemp eliminase. Nature Communications, 2017, 8, 14876.	12.8	44
70	Structural and Computational Insight into the Catalytic Mechanism of Limonene Epoxide Hydrolase Mutants in Stereoselective Transformations. Journal of the American Chemical Society, 2018, 140, 310-318.	13.7	44
71	Overriding Traditional Electronic Effects in Biocatalytic Baeyerâ€"Villiger Reactions by Directed Evolution. Journal of the American Chemical Society, 2018, 140, 10464-10472.	13.7	43
72	Die zentrale Rolle der Methodenentwicklung in der gerichteten Evolution selektiver Enzyme. Angewandte Chemie, 2020, 132, 13304-13333.	2.0	42

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73	Inducing high activity of a thermophilic enzyme at ambient temperatures by directed evolution. Chemical Communications, 2017, 53, 9454-9457.	4.1	41
74	A thermostable variant of P. aeruginosa cold-adapted LipC obtained by rational design and saturation mutagenesis. Process Biochemistry, 2012, 47, 2064-2071.	3.7	40
75	Directed Evolution of Artificial Metalloenzymes. Israel Journal of Chemistry, 2015, 55, 51-60.	2.3	40
76	Statistical Analysis of the Benefits of Focused Saturation Mutagenesis in Directed Evolution Based on Reduced Amino Acid Alphabets. ACS Catalysis, 2019, 9, 7769-7778.	11.2	40
77	CH-activating oxidative hydroxylation of 1-tetralones and related compounds with high regio- and stereoselectivity. Chemical Communications, 2014, 50, 14310-14313.	4.1	39
78	Beating Bias in the Directed Evolution of Proteins: Combining Highâ€Fidelity onâ€Chip Solidâ€Phase Gene Synthesis with Efficient Gene Assembly for Combinatorial Library Construction. ChemBioChem, 2018, 19, 221-228.	2.6	39
79	Sequential Copper(I)â€Catalyzed Reaction of Amines with <i>o</i>â€Acetylenylâ€Substituted Phenyldiazoacetates. Advanced Synthesis and Catalysis, 2008, 350, 2359-2364.	4.3	38
80	Knowledgeâ€guided laboratory evolution of protein thermolability. Biotechnology and Bioengineering, 2009, 102, 1712-1717.	3.3	38
81	Biocatalytic Route to Chiral Acyloins: P450-Catalyzed Regio- and Enantioselective Î±-Hydroxylation of Ketones. Journal of Organic Chemistry, 2015, 80, 950-956.	3.2	37
82	P450-BM3-Catalyzed Sulfoxidation versus Hydroxylation: A Common or Two Different Catalytically Active Species?. Journal of the American Chemical Society, 2020, 142, 2068-2073.	13.7	37
83	One-step combined focused epPCR and saturation mutagenesis for thermostability evolution of a new cold-active xylanase. Enzyme and Microbial Technology, 2017, 100, 60-70.	3.2	35
84	Exploiting Designed Oxidaseâ€“Peroxygenase Mutual Benefit System for Asymmetric Cascade Reactions. Journal of the American Chemical Society, 2019, 141, 5655-5658.	13.7	32
85	Quantum Mechanical/Molecular Mechanical Study on the Enantioselectivity of the Enzymatic Baeyerâ€“Villiger Reaction of 4-Hydroxycyclohexanone. Journal of Physical Chemistry B, 2013, 117, 4993-5001.	2.6	31
86	Comparing Different Strategies in Directed Evolution of Enzyme Stereoselectivity: Singleâ€•versus Doubleâ€Code Saturation Mutagenesis. ChemBioChem, 2016, 17, 1865-1872.	2.6	31
87	A New Type of Stereoselectivity in Baeyerâ€“Villiger Reactions: Access to <i>E</i>â€•and <i>Z</i>â€Olefins. Advanced Synthesis and Catalysis, 2013, 355, 99-106.	4.3	30
88	Rh(I)â€Catalyzed Reaction of Trifluoromethylketone <i>N</i>â€Tosylhydrazones and Arylboronates. Chinese Journal of Chemistry, 2016, 34, 473-476.	4.9	30
89	Manipulating the stereoselectivity of the thermostable Baeyerâ€“Villiger monooxygenase TmCHMO by directed evolution. Organic and Biomolecular Chemistry, 2017, 15, 9824-9829.	2.8	30
90	Geminal difunctionalization of Î±-diazo arylmethylphosphonates: synthesis of fluorinated phosphonates. Organic and Biomolecular Chemistry, 2016, 14, 10444-10453.	2.8	29

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91	Making Enzymes Suitable for Organic Chemistry by Rational Protein Design. ChemBioChem, 2022, 23, .	2.6	28
92	Assembly of Designed Oligonucleotides: A Useful Tool in Synthetic Biology for Creating High-Quality Combinatorial DNA Libraries. Methods in Molecular Biology, 2014, 1179, 189-206.	0.9	27
93	Copper(<scp>i</scp>)-catalyzed olefination of N-sulfonylhydrazones with sulfones. Chemical Communications, 2016, 52, 4478-4480.	4.1	26
94	Cu(I)â€Catalyzed Threeâ€Component Coupling of Trifluoromethyl Ketone<i>N</i>â€Tosylhydrazones, Alkynes and Azides: Synthesis of Difluoromethylene Substituted 1,2,3â€Triazoles. Chinese Journal of Chemistry, 2017, 35, 387-391.	4.9	25
95	Chemoâ€•and Stereoselective Cytochrome P450â€BM3â€Catalyzed Sulfoxidation of 1â€Thiochromanâ€4â€ones Enabled by Directed Evolution. Advanced Synthesis and Catalysis, 2017, 359, 2056-2060.	4.3	25
96	Investigating Substrate Scope and Enantioselectivity of a Defluorinase by a Stereochemical Probe. Journal of the American Chemical Society, 2017, 139, 11241-11247.	13.7	25
97	Rapid and Error-Free Site-Directed Mutagenesis by a PCR-Free <i>In Vitro</i> CRISPR/Cas9-Mediated Mutagenic System. ACS Synthetic Biology, 2018, 7, 2236-2244.	3.8	25
98	Directed Evolution of Proteins Based on Mutational Scanning. Methods in Molecular Biology, 2018, 1685, 87-128.	0.9	24
99	Solidâ€Phase Gene Synthesis for Mutant Library Construction: The Future of Directed Evolution?. ChemBioChem, 2018, 19, 2023-2032.	2.6	24
100	1-Butanol as a Solvent for Efficient Extraction of Polar Compounds from Aqueous Medium: Theoretical and Practical Aspects. Journal of Physical Chemistry B, 2018, 122, 6975-6988.	2.6	24
101	Exploring productive sequence space in directed evolution using binary patterning versus conventional mutagenesis strategies. Bioresources and Bioprocessing, 2016, 3, .	4.2	22
102	Machine Learning Enables Selection of Epistatic Enzyme Mutants for Stability Against Unfolding and Detrimental Aggregation. ChemBioChem, 2021, 22, 904-914.	2.6	22
103	P450-Catalyzed Regio- and Stereoselective Oxidative Hydroxylation of 6-Iodotetralone: Preparative-Scale Synthesis of a Key Intermediate for Pd-Catalyzed Transformations. Journal of Organic Chemistry, 2018, 83, 7504-7508.	3.2	20
104	Methodology Development in Directed Evolution: Exploring Options when Applying Tripleâ€Code Saturation Mutagenesis. ChemBioChem, 2018, 19, 239-246.	2.6	19
105	Regioâ€•and Stereoselective Steroid Hydroxylation at C7 by Cytochromeâ€…P450 Monooxygenase Mutants. Angewandte Chemie, 2020, 132, 12599-12605.	2.0	19
106	The Unexplored Importance of Fleeting Chiral Intermediates in Enzyme-Catalyzed Reactions. Journal of the American Chemical Society, 2021, 143, 14939-14950.	13.7	19
107	Hinge-Type Dimerization of Proteins by a Tetracysteine Peptide of High Pairing Specificity. Biochemistry, 2018, 57, 3658-3664.	2.5	18
108	Stereo- and regioselectivity in the P450-catalyzed oxidative tandem difunctionalization of 1-methylcyclohexene. Tetrahedron, 2013, 69, 5306-5311.	1.9	17

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109	Palladiumâ€Catalyzed Cascade Reactions of <i>Î±</i>â€Haloâ€<i>N</i>â€Tosylhydrazones, Indoles, and Aryl Iodides. Asian Journal of Organic Chemistry, 2016, 5, 874-877.	2.7	12
110	Rh(I)â€Catalyzed Arylation of <i>Î±</i>â€Diazo Phosphonates with Aryl Boronic Acids: Synthesis of Diarylmethylphosphonates. Chinese Journal of Chemistry, 2017, 35, 621-627.	4.9	11
111	A Cellâ€Based Adrenaline Assay for Automated Highâ€Throughput Activity Screening of Epoxide Hydrolases. Chemistry - an Asian Journal, 2008, 3, 233-238.	3.3	10
112	An efficient method for mutant library creation in<i>Pichia pastoris</i>useful in directed evolution. Biocatalysis and Biotransformation, 2010, 28, 122-129.	2.0	10
113	Recent Advances in Directed Evolution of Stereoselective Enzymes. , 2017, , 69-99.		10
114	Select Protocols of High-Throughput ee-Screening Systems for Assaying Enantioselective Enzymes. , 2003, 230, 283-290.		9
115	A breakthrough in protein engineering of a glycosyltransferase. Green Synthesis and Catalysis, 2021, 2, 4-5.	6.8	9
116	Transition-metal-free three-component reaction of cyclopropenes, aldehydes and amines. Chemical Communications, 2016, 52, 13285-13287.	4.1	6
117	Biocatalytic Baeyerâ€“Villiger Reactions: Uncovering the Source of Regioselectivity at Each Evolutionary Stage of a Mutant with Scrutiny of Fleeting Chiral Intermediates. ACS Catalysis, 2022, 12, 3669-3680.	11.2	6
118	<i>n</i>â€Butanol: An Ecologically and Economically Viable Extraction Solvent for Isolating Polar Products from Aqueous Solutions. European Journal of Organic Chemistry, 2021, 2021, 6224-6228.	2.4	5
119	Controlling the Regio- and Stereoselectivity of Cytochrome P450 Monooxygenases by Protein Engineering. 2-Oxoglutarate-Dependent Oxygenases, 2018, , 274-291.	0.8	2