Roland Wohlgemuth

List of Publications by Year
in descending order

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Version: 2024-02-01

111 papers	4,762 citations	87888 38 h-index	102487 66 g-index
131 all docs	131 docs citations	131 times ranked	4359 citing authors

#	Article	IF	Citations
1	Ex vivo glycan engineering of CD44 programs human multipotent mesenchymal stromal cell trafficking to bone. Nature Medicine, 2008, 14, 181-187.	30.7	573
2	Biocatalysisâ€"key to sustainable industrial chemistry. Current Opinion in Biotechnology, 2010, 21, 713-724.	6.6	286
3	Orientation and flexibility of the choline head group in phosphatidylcholine bilayers. Biochimica Et Biophysica Acta - Biomembranes, 1977, 467, 109-119.	2.6	211
4	Towards large-scale synthetic applications of Baeyer-Villiger monooxygenases. Trends in Biotechnology, 2003, 21, 318-323.	9.3	184
5	Microscale technology and biocatalytic processes: opportunities and challenges for synthesis. Trends in Biotechnology, 2015, 33, 302-314.	9.3	167
6	Guidelines for reporting of biocatalytic reactions. Trends in Biotechnology, 2010, 28, 171-180.	9.3	144
7	High-Yield Biocatalytic Amination Reactions in Organic Synthesis. Current Organic Chemistry, 2010, 14, 1914-1927.	1.6	139
8	The electronic evaluation of fetal heart rate. American Journal of Obstetrics and Gynecology, 1961, 81, 361-371.	1.3	111
9	Microbial Transformations, 56. Preparative Scale Asymmetric Baeyerâ€"Villiger Oxidation using a Highly Productiveâ€œTwo-in-Oneâ€•Resin-Basedin situ SFPR Concept. Advanced Synthesis and Catalysis, 2004, 346, 203-214.	4.3	103
10	Microbial transformations 59: First kilogram scale asymmetric microbial Baeyer-Villiger oxidation with optimized productivity using a resin-based in situ SFPR strategy. Biotechnology and Bioengineering, 2005, 92, 702-710.	3.3	103
11	Bioeconomy for Sustainable Development. Biotechnology Journal, 2019, 14, e1800638.	3.5	98
12	The use of enzymes in organic synthesis and the life sciences: perspectives from the Swiss Industrial Biocatalysis Consortium (SIBC). Catalysis Science and Technology, 2013, 3, 29-40.	4.1	97
13	Reactor Operation and Scale-Up of Whole Cell Baeyer-Villiger Catalyzed Lactone Synthesis. Biotechnology Progress, 2002, 18, 1039-1046.	2.6	88
14	Bilayers of phosphatidylglycerol. A deuterium and phosphorus nuclear magnetic resonance study of the head-group region. Biochemistry, 1980, 19, 3315-3321.	2.5	86
15	The headgroup conformation of phospholipids in membranes. Journal of Membrane Biology, 1981, 58, 81-100.	2.1	86
16	Asymmetric biocatalysis with microbial enzymes and cells. Current Opinion in Microbiology, 2010, 13, 283-292.	5.1	85
17	Preparative scale Baeyerâ€"Villiger biooxidation at high concentration using recombinant Escherichia coli and in situ substrate feeding and product removal process. Nature Protocols, 2008, 3, 546-554.	12.0	78
18	Epoxide Hydrolases and their Application in Organic Synthesis. Current Organic Chemistry, 2012, 16, 451-482.	1.6	75

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19	The First 200-L Scale Asymmetric Baeyerâ^'Villiger Oxidation Using a Whole-Cell Biocatalyst. Organic Process Research and Development, 2008, 12, 660-665.	2.7	74
20	The locks and keys to industrial biotechnology. New Biotechnology, 2009, 25, 204-213.	4.4	73
21	Perspectives on bioeconomy. New Biotechnology, 2018, 40, 181-184.	4.4	68
22	On the influence of oxygen and cell concentration in an SFPR whole cell biocatalytic Baeyerâ€"Villiger oxidation process. Biotechnology and Bioengineering, 2006, 93, 1138-1144.	3.3	58
23	Applications of Baeyer-Villiger Monooxygenases in Organic Synthesis. Current Organic Chemistry, 2010, 14, 1928-1965.	1.6	57
24	Microbiological Transformations 57. Facile and Efficient Resin-Based in Situ SFPR Preparative-Scale Synthesis of an Enantiopure â€œUnexpectedâ€•Lactone Regioisomer via a Baeyerâ^'Villiger Oxidation Process. Organic Letters, 2004, 6, 1955-1958.	4.6	55
25	Characterization of a wholeâ€•cell catalyst coâ€•expressing glycerol dehydrogenase and glucose dehydrogenase and its application in the synthesis of <scp>L</scp>â€•glyceraldehyde. Biotechnology and Bioengineering, 2010, 106, 541-552.	3.3	54
26	Biocatalysis as Key to Sustainable Industrial Chemistry. ChemSusChem, 2022, 15, e202102709.	6.8	52
27	C2-Ketol elongation by transketolase-catalyzed asymmetric synthesis. Journal of Molecular Catalysis B: Enzymatic, 2009, 61, 23-29.	1.8	51
28	Conscious coupling: The challenges and opportunities of cascading enzymatic microreactors. Biotechnology Journal, 2017, 12, 1700030.	3.5	50
29	Oneâ€Pot Cascade Reactions using Fructoseâ€6â€•phosphate Aldolase: Efficient Synthesis of <scp>D</scp>â€Arabinose 5â€Phosphate, <scp>D</scp>â€Fructose 6â€Phosphate and Analogues. Advanced Synthesis and Catalysis, 2012, 354, 1725-1730.	4.3	47
30	Characterization of enzymatic <scp>D</scp>â€•xylulose 5â€•phosphate synthesis. Biotechnology and Bioengineering, 2008, 101, 761-767.	3.3	45
31	Synthesis of pyridoxamine 5â€²-phosphate using an MBA:pyruvate transaminase as biocatalyst. Journal of Molecular Catalysis B: Enzymatic, 2009, 59, 279-285.	1.8	44
32	Biocatalytic Phosphorylations of Metabolites: Past, Present, and Future. Trends in Biotechnology, 2017, 35, 452-465.	9.3	44
33	Discovery and characterization of thermophilic limoneneâ€•1,2â€•epoxide hydrolases from hot spring metagenomic libraries. FEBS Journal, 2015, 282, 2879-2894.	4.7	43
34	Semiquantitative Process Screening for the Biocatalytic Synthesis ofd-Xylulose-5-phosphate. Organic Process Research and Development, 2006, 10, 605-610.	2.7	42
35	Bioeconomy moving forward step by step â€“ A global journey. New Biotechnology, 2021, 61, 22-28.	4.4	42
36	Characterisation of a Recombinant NADPâ€Dependent Glycerol Dehydrogenase from Gluconobacter oxydans and its Application in the Production of <scp>L</scp>â€Glyceraldehyde. ChemBioChem, 2009, 10, 1888-1896.	2.6	41

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37	Enzymatic synthesis of chiral aminoâ€alcohols by coupling transketolase and transaminaseâ€catalyzed reactions in a cascading continuousâ€flow microreactor system. Biotechnology and Bioengineering, 2018, 115, 586-596.	3.3	41
38	A combined experimental and modelling approach for the Weimberg pathway optimisation. Nature Communications, 2020, 11, 1098.	12.8	41
39	Interfacing biocatalysis and organic synthesis. Journal of Chemical Technology and Biotechnology, 2007, 82, 1055-1062.	3.2	40
40	STRENDA DB: enabling the validation and sharing of enzyme kinetics data. FEBS Journal, 2018, 285, 2193-2204.	4.7	38
41	Discovering novel hydrolases from hot environments. Biotechnology Advances, 2018, 36, 2077-2100.	11.7	38
42	Modular microfluidic reactor and inline filtration system for the biocatalytic synthesis of chiral metabolites. Journal of Molecular Catalysis B: Enzymatic, 2012, 77, 1-8.	1.8	37
43	Chemical and enzymatic methodologies for the synthesis of enantiomerically pure glyceraldehyde 3-phosphates. Carbohydrate Research, 2014, 389, 18-24.	2.3	33
44	Recombinant Chlorobenzene Dioxygenase fromPseudomonas sp. P51: A Biocatalyst for Regioselective Oxidation of Aromatic Nitriles. Advanced Synthesis and Catalysis, 2005, 347, 1060-1072.	4.3	32
45	Biocatalysis â€“ Key enabling tools from biocatalytic one-step and multi-step reactions to biocatalytic total synthesis. New Biotechnology, 2021, 60, 113-123.	4.4	31
46	Microfluidic multi-input reactor for biocatalytic synthesis using transketolase. Journal of Molecular Catalysis B: Enzymatic, 2013, 95, 111-117.	1.8	30
47	Tools for Selective Enzyme Reaction Steps in the Synthesis of Laboratory Chemicals. Engineering in Life Sciences, 2006, 6, 577-583.	3.6	29
48	Chemoenzymatic synthesis of chiral carboxylic acids via nitriles. Journal of Chemical Technology and Biotechnology, 2007, 82, 1087-1098.	3.2	28
49	Realâ€time pH monitoring of industrially relevant enzymatic reactions in a microfluidic sideâ€entry reactor (Î¼SER) shows potential for pH control. Biotechnology Journal, 2017, 12, 1600475.	3.5	27
50	Tools and ingredients for the biocatalytic synthesis of metabolites. Biotechnology Journal, 2009, 4, 1253-1265.	3.5	26
51	Modular and scalable biocatalytic tools for practical safety, health and environmental improvements in the production of speciality chemicals. Biocatalysis and Biotransformation, 2007, 25, 178-185.	2.0	25
52	Characterization of a phosphotriesterase-like lactonase from the hyperthermoacidophilic crenarchaeon Vulcanisaeta moutnovskia. Journal of Biotechnology, 2014, 190, 11-17.	3.8	25
53	One-step synthesis of 2-keto-3-deoxy-d-gluconate by biocatalytic dehydration of d-gluconate. Journal of Biotechnology, 2014, 191, 69-77.	3.8	23
54	Straightforward Synthesis of Terminally Phosphorylated <scp>L</scp>â€Sugars via Multienzymatic Cascade Reactions. Advanced Synthesis and Catalysis, 2015, 357, 1703-1708.	4.3	21

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55	Economic Considerations for Selecting an Amine Donor in Biocatalytic Transamination. Organic Process Research and Development, 2015, 19, 652-660.	2.7	20
56	Efficient Epoxide Hydrolase Catalyzed Resolutions of (+)â€•and (â^')â€‹cis/transâ€‹Limonene Oxides. ChemCatChem, 2015, 7, 3171-3178.	3.7	19
57	A generic model-based methodology for quantification of mass transfer limitations in microreactors. Chemical Engineering Journal, 2016, 300, 193-208.	12.7	19
58	Horizons of Systems Biocatalysis and Renaissance of Metabolite Synthesis. Biotechnology Journal, 2018, 13, 1700620.	3.5	19
59	An empirical analysis of enzyme function reporting for experimental reproducibility: Missing/incomplete information in published papers. Biophysical Chemistry, 2018, 242, 22-27.	2.8	19
60	Selective hydrolysis of the nitrile group of cis-dihydrodiols from aromatic nitriles. Journal of Molecular Catalysis B: Enzymatic, 2006, 38, 76-83.	1.8	17
61	Biocatalytic asymmetric phosphorylation of mevalonate. RSC Advances, 2014, 4, 12989.	3.6	17
62	Modeling and Simulation of Burr Formation: State-of-the-Art and Future Trends. , 2010, , 79-86.		17
63	Laccase-mediated synthesis of 2-methoxy-3-methyl-5-(alkylamino)- and 3-methyl-2,5-bis(alkylamino)-[1,4]-benzoquinones. Journal of Molecular Catalysis B: Enzymatic, 2013, 90, 91-97.	1.8	16
64	Preface to the special issue bioeconomy. New Biotechnology, 2018, 40, 1-4.	4.4	16
65	Biocatalytic Process Design and Reaction Engineering. Chemical and Biochemical Engineering Quarterly, 2017, 31, 131-138.	0.9	15
66	Tools and ingredients for the biocatalytic synthesis of carbohydrates and glycoconjugates. Biocatalysis and Biotransformation, 2008, 26, 42-48.	2.0	14
67	Process analysis of macrotetrolide biosynthesis during fermentation by means of direct infusion LCâ€MS. Biotechnology Journal, 2008, 3, 202-208.	3.5	13
68	Biocatalytic Asymmetric Phosphorylation Catalyzed by Recombinant Glycerateâ€2â€Kinase. ChemBioChem, 2017, 18, 1518-1522.	2.6	13
69	Phosphorylation Catalyzed by Dihydroxyacetone Kinase. European Journal of Organic Chemistry, 2018, 2018, 2892-2895.	2.4	13
70	Biocatalysis in the Swiss Manufacturing Environment. Catalysts, 2020, 10, 1420.	3.5	13
71	Development, Production, and Application of Recombinant Yeast Biocatalysts in Organic Synthesis. Chimia, 2005, 59, 735-740.	0.6	11
72	Amino acid oxidaseâ€catalysed resolution and Pictetâ€“Spengler reaction towards chiral and rigid unnatural amino acids. Journal of Chemical Technology and Biotechnology, 2007, 82, 1082-1086.	3.2	11

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73	Highly efficient and scalable chemoenzymatic syntheses of (R)- and (S)-lactaldehydes. Reaction Chemistry and Engineering, 2016, 1, 156-160.	3.7	11
74	Synthesis of N_{Ï‰}â€Phosphoâ€<scp>l</scp>â€arginine by Biocatalytic Phosphorylation of <scp>l</scp>â€Arginine. ChemCatChem, 2017, 9, 121-126.	3.7	11
75	Key advances in biocatalytic phosphorylations in the last two decades: Biocatalytic syntheses in vitro and biotransformations in vivo (in humans). Biotechnology Journal, 2021, 16, e2000090.	3.5	11
76	Selective Biocatalytic Defunctionalization of Raw Materials. ChemSusChem, 2022, 15, .	6.8	11
77	Beobachtungen und Untersuchungen Ã¼ber die Biologie der SÃ¼ÃŸwasserostracoden; ihr Vorkommen in Sachsen und BÃ¶hmen, ihre Lebensweise und ihre Fortpflanzung.. International Review of Hydrobiology, 1914, 6, 1-72.	0.6	10
78	Recombinant AroLâ€Catalyzed Phosphorylation for the Efficient Synthesis of Shikimic Acid 3â€Phosphate. Biotechnology Journal, 2018, 13, e1700529.	3.5	10
79	Facile synthesis of D-xylulose-5-phosphate and L-xylulose-5-phosphate by xylulokinase-catalyzed phosphorylation. Biocatalysis and Biotransformation, 2020, 38, 35-45.	2.0	10
80	Efficient biocatalytic synthesis of D-tagatose 1,6-diphosphate by LacC-catalysed phosphorylation of D-tagatose 6-phosphate. Biocatalysis and Biotransformation, 2020, 38, 53-63.	2.0	10
81	Product Recovery. , 2011, , 591-601.		9
82	Bioreaction Engineering Leading to Efficient Synthesis of Lâ€Glyceraldehydâ€3â€Phosphate. Biotechnology Journal, 2017, 12, 1600625.	3.5	9
83	Ãœber die Ei- und Larvalentwicklung vonTrogoderma angustum Sol. (Dermestidae). Journal of Pest Science, 1967, 40, 83-91.	3.7	8
84	One-pot enzymatic reaction sequence for the syntheses of d-glyceraldehyde 3-phosphate and l-glycerol 3-phosphate. Journal of Molecular Catalysis B: Enzymatic, 2016, 124, 77-82.	1.8	8
85	Biocatalytic asymmetric Michael addition reaction ofl-arginine to fumarate for the green synthesis of N-(([(4S)-4-amino-4-carboxy-butyl]amino)iminomethyl)-l-aspartic acid lithium salt (l-argininosuccinic) Tj ETQq1 1 0.784314 rgBT /Over		
86	Preparative-scale separation by simulated moving bed chromatography of biocatalytically produced regioisomeric lactones. New Biotechnology, 2009, 25, 220-225.	4.4	7
87	Influence of pH on the expression of a recombinant epoxide hydrolase in Aspergillus niger. Biotechnology Journal, 2009, 4, 756-765.	3.5	7
88	Bio-based resources, bioprocesses and bioproducts in value creation architectures for bioeconomy markets and beyond â€“ What really matters. EFB Bioeconomy Journal, 2021, 1, 100009.	2.4	7
89	Environmental influences on the photooxidation of manganese by a zinc porphyrin sensitizer. Proceedings of the National Academy of Sciences of the United States of America, 1982, 79, 5111-5114.	7.1	6
90	Mechanistic and kinetics elucidation of Mg2+/ATP molar ratio effect on glycerol kinase. Molecular Catalysis, 2018, 445, 36-42.	2.0	6

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91	Enzymatic Synthesis of 2-Keto-3-Deoxy-6-Phosphogluconate by the 6-Phosphogluconate-Dehydratase From Caulobacter crescentus. Frontiers in Bioengineering and Biotechnology, 2020, 8, 185.	4.1	6
92	Production of epoxide hydrolases in batch fermentations of Botryosphaeria rhodina. Journal of Industrial Microbiology and Biotechnology, 2008, 35, 485-493.	3.0	5
93	Swiss Industrial Biocatalysis Consortium (SIBC). Chimia, 2010, 64, 780.	0.6	4
94	Industrial biotechnology â€“ past, present and future. New Biotechnology, 2012, 29, 165.	4.4	4
95	Desymmetrization of cbz-serinol catalyzed by crude pig pancreatic lipase reveals action of lipases with opposite enantioselectivity. Journal of Molecular Catalysis B: Enzymatic, 2013, 85-86, 134-139.	1.8	4
96	Introduction to the special issue: Trends in bioeconomy. New Biotechnology, 2021, 61, 9-10.	4.4	4
97	7.04 Oxidation by Microbial Methods. , 2014, , 121-144.		2
98	The challenges and opportunities of cascading enzymatic microreactors. New Biotechnology, 2018, 44, S36.	4.4	2
99	Building Bridges between Biotechnology and Chemistry â€“ Oreste Ghisalba's Pioneering Activities, Publications and Programs. Chimia, 2020, 74, 322.	0.6	2
100	Biocatalysis as Key to Sustainable Industrial Chemistry. ChemSusChem, 2022, , e202200709.	6.8	2
101	Preface to Special Issue on Biocatalysis as Key to Sustainable Industrial Chemistry. ChemSusChem, 2022, 15, e202200640.	6.8	2
102	From lab to large scale â€“ Industrial biocatalysis from an SIBC perspective. New Biotechnology, 2018, 44, S62.	4.4	1
103	Versuche zur Ãœberwinterungsfähigkeit und Kälteresistenz vonTrogoderma angustum (Dermestidae). Journal of Pest Science, 1969, 42, 132-138.	3.7	0
104	The Eleventh European Congress on Biotechnology, Basel, Switzerland, August 26, 2003. Biocatalysis and Biotransformation, 2004, 22, 61-62.	2.0	0
105	Additions and corrections published in 2013. Catalysis Science and Technology, 2013, 3, 3371.	4.1	0
106	Exploitation of novel epoxide hydrolases from metagenomic libraries in the solvent-free preparative resolutions of limonene oxides mixtures. New Biotechnology, 2016, 33, S97.	4.4	0
107	Molecular and Engineering Aspects of Biocatalysis. Biotechnology Journal, 2020, 15, 2000499.	3.5	0
108	Fucosyltransferase VI Induces Platelet Activation: A Novel Property of a Plasma Glycosyltransferase.. Blood, 2009, 114, 4016-4016.	1.4	0

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109	Product Recovery. , 2011, , 681-691.		0
110	Editorial. Chimia, 2020, 74, 317.	0.6	0
111	CHAPTER 3. Biocatalytic Synthesis of Small Molecules â€“ Past, Present and Future. RSC Catalysis Series, 0, , 77-97.	0.1	0