Wolfgang Zimmermann

List of Publications by Year
in descending order

114 papers	6,371 citations	70961 41 h-index	74018 75 g-index
121 all docs	121 docs citations	121 times ranked	4220 citing authors

#	Article	IF	Citations
1	Microbial enzymes for the recycling of recalcitrant petroleumâ€based plastics: how far are we?. Microbial Biotechnology, 2017, 10, 1308-1322.	2.0	503
2	Enzymatic Surface Hydrolysis of PET: Effect of Structural Diversity on Kinetic Properties of Cutinases from Thermobifida. Macromolecules, 2011, 44, 4632-4640.	2.2	298
3	New Insights into the Function and Global Distribution of Polyethylene Terephthalate (PET)-Degrading Bacteria and Enzymes in Marine and Terrestrial Metagenomes. Applied and Environmental Microbiology, 2018, 84, .	1.4	259
4	Biocatalysis as a green route for recycling the recalcitrant plastic polyethylene terephthalate. Microbial Biotechnology, 2017, 10, 1302-1307.	2.0	215
5	Degradation of lignin by bacteria. Journal of Biotechnology, 1990, 13, 119-130.	1.9	213
6	Structural and functional studies on a thermostable polyethylene terephthalate degrading hydrolase from Thermobifida fusca. Applied Microbiology and Biotechnology, 2014, 98, 7815-7823.	1.7	191
7	Biocatalytic Degradation Efficiency of Postconsumer Polyethylene Terephthalate Packaging Determined by Their Polymer Microstructures. Advanced Science, 2019, 6, 1900491.	5.6	181
8	Engineered bacterial polyester hydrolases efficiently degrade polyethylene terephthalate due to relieved product inhibition. Biotechnology and Bioengineering, 2016, 113, 1658-1665.	1.7	169
9	Effect of hydrolysis products on the enzymatic degradation of polyethylene terephthalate nanoparticles by a polyester hydrolase from Thermobifida fusca. Biochemical Engineering Journal, 2015, 93, 222-228.	1.8	164
10	High-resolution native and complex structures of thermostable Î2-mannanase from Thermomonospora fusca â€“ substrate specificity in glycosyl hydrolase family 5. Structure, 1998, 6, 1433-1444.	1.6	163
11	Towards bio-upcycling of polyethylene terephthalate. Metabolic Engineering, 2021, 66, 167-178.	3.6	151
12	A dual enzyme system composed of a polyester hydrolase and a carboxylesterase enhances the biocatalytic degradation of polyethylene terephthalate films. Biotechnology Journal, 2016, 11, 1082-1087.	1.8	145
13	Cyclodextrin glucanotransferase: from gene to applications. Applied Microbiology and Biotechnology, 2005, 66, 475-485.	1.7	139
14	Optimization of carbohydrate fatty acid ester synthesis in organic media by a lipase fromCandida antarctica. Biotechnology and Bioengineering, 2001, 74, 483-491.	1.7	131
15	Functional characterization and structural modeling of synthetic polyester-degrading hydrolases from Thermomonospora curvata. AMB Express, 2014, 4, 44.	1.4	117
16	Ca²⁺ and Mg²⁺ binding site engineering increases the degradation of polyethylene terephthalate films by polyester hydrolases from <i>Thermobifida fusca</i>. Biotechnology Journal, 2015, 10, 592-598.	1.8	117
17	Decolorization of industrial effluents containing reactive dyes by actinomycetes. FEMS Microbiology Letters, 1993, 107, 157-161.	0.7	116
18	Degradation of Polyester Polyurethane by Bacterial Polyester Hydrolases. Polymers, 2017, 9, 65.	2.0	116

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19	Lipase-catalysed synthesis of glucose fatty acid esters in tert-butanol. Biotechnology Letters, 1999, 21, 275-280.	1.1	113
20	Increase of the Hydrophilicity of Polyethylene Terephthalate Fibres by Hydrolases from Thermomonospora fusca and Fusarium solani f. sp. pisi. Biotechnology Letters, 2006, 28, 681-685.	1.1	101
21	Comparison of the hydrolysis of polyethylene terephthalate fibers by a hydrolase fromFusarium oxysporum LCH I andFusarium solani f. sp.pisi. Biotechnology Journal, 2007, 2, 361-364.	1.8	95
22	Microbial Genes for a Circular and Sustainable Bio-PET Economy. Genes, 2019, 10, 373.	1.0	94
23	A disulfide bridge in the calcium binding site of a polyester hydrolase increases its thermal stability and activity against polyethylene terephthalate. FEBS Open Bio, 2016, 6, 425-432.	1.0	91
24	Conformational fitting of a flexible oligomeric substrate does not explain the enzymatic PET degradation. Nature Communications, 2019, 10, 5581.	5.8	89
25	Synthetic Polyester-Hydrolyzing Enzymes From Thermophilic Actinomycetes. Advances in Applied Microbiology, 2014, 89, 267-305.	1.3	86
26	Biocatalytic modification of polyethylene terephthalate fibres by esterases from actinomycete isolates. Biocatalysis and Biotransformation, 2004, 22, 347-351.	1.1	83
27	High-affinity hostâ€“guest chemistry of large-ring cyclodextrins. Organic and Biomolecular Chemistry, 2016, 14, 7702-7706.	1.5	80
28	Biochemical characterization of the cutinases from Thermobifida fusca. Journal of Molecular Catalysis B: Enzymatic, 2010, 63, 121-127.	1.8	78
29	Hydrolysis of cyclic poly(ethylene terephthalate) trimers by a carboxylesterase from Thermobifida fusca KW3. Applied Microbiology and Biotechnology, 2010, 87, 1753-1764.	1.7	77
30	Enzymatic hydrolysis of polyethylene terephthalate films in an ultrafiltration membrane reactor. Journal of Membrane Science, 2015, 494, 182-187.	4.1	71
31	Low Carbon Footprint Recycling of Postâ€Consumer PET Plastic with a Metagenomic Polyester Hydrolase. ChemSusChem, 2022, 15, .	3.6	70
32	Turbidimetric analysis of the enzymatic hydrolysis of polyethylene terephthalate nanoparticles. Journal of Molecular Catalysis B: Enzymatic, 2014, 103, 72-78.	1.8	67
33	Inclusion complex formation constants of Î±-, Î²-, Î³-, Î´-, Îµ-, Î¶-, Î·- and Î¸-cyclodextrins determined with capillary zone electrophoresis. Carbohydrate Research, 1998, 309, 153-159.	1.1	65
34	Enzymatic Synthesis and Analysis of Large-Ring Cyclodextrins. Australian Journal of Chemistry, 2002, 55, 39.	0.5	64
35	High level expression of a hydrophobic poly(ethylene terephthalate)-hydrolyzing carboxylesterase from Thermobifida fusca KW3 in Escherichia coli BL21(DE3). Journal of Biotechnology, 2010, 146, 100-104.	1.9	61
36	Î²-Galactooligosaccharide synthesis with Î²-galactosidases from Sulfolobus solfataricus, Aspergillus oryzae, and Escherichia coli. Enzyme and Microbial Technology, 1999, 25, 509-516.	1.6	58

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37	Enzymes for the Biofunctionalization of Poly(Ethylene Terephthalate). Advances in Biochemical Engineering/Biotechnology, 2010, 125, 97-120.	0.6	58
38	Effect of Tris, MOPS, and phosphate buffers on the hydrolysis of polyethylene terephthalate films by polyester hydrolases. FEBS Open Bio, 2016, 6, 919-927.	1.0	52
39	A highâ€throughput assay for enzymatic polyester hydrolysis activity by fluorimetric detection. Biotechnology Journal, 2012, 7, 1517-1521.	1.8	49
40	UV Pretreatment Impairs the Enzymatic Degradation of Polyethylene Terephthalate. Frontiers in Microbiology, 2020, 11, 689.	1.5	46
41	Amylose recognition and ring-size determination of amylomaltase. Science Advances, 2017, 3, e1601386.	4.7	42
42	Effect of the reaction temperature on the transglycosylation reactions catalyzed by the cyclodextrin glucanotransferase from Bacillus macerans for the synthesis of large-ring cyclodextrins. Tetrahedron, 2004, 60, 799-806.	1.0	41
43	Suberin-grown Fusarium solani f. sp pisi generates a cutinase-like esterase which depolymerizes the aliphatic components of suberin. Physiological Plant Pathology, 1984, 24, 143-155.	1.4	38
44	Purification and characterisation of cyclodextrin glycosyltransferase from Paenibacillus sp. F8. Carbohydrate Research, 1998, 310, 211-219.	1.1	38
45	Analysis and characterisation of cyclodextrins and their inclusion complexes by affinity capillary electrophoresis. Journal of Chromatography A, 1999, 836, 3-14.	1.8	38
46	Biocatalytic recycling of polyethylene terephthalate plastic. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190273.	1.6	38
47	A novel amylomaltase from Corynebacterium glutamicum and analysis of the large-ring cyclodextrin products. Journal of Inclusion Phenomena and Macrocyclic Chemistry, 2011, 70, 369-375.	1.6	37
48	Effect of ethanol on the synthesis of large-ring cyclodextrins by cyclodextrin glucanotransferases. Journal of Inclusion Phenomena and Macrocyclic Chemistry, 2007, 57, 95-99.	1.6	36
49	Plastic Biodegradation: Challenges and Opportunities. , 2018, , 1-29.		33
50	Largeâ€Ring Cyclodextrins as Chiral Selectors for Enantiomeric Pharmaceuticals. Angewandte Chemie - International Edition, 2019, 58, 6411-6414.	7.2	33
51	Degradation of organochlorine compounds in spent sulfite bleach plant effluents by actinomycetes. Applied and Environmental Microbiology, 1991, 57, 2858-2863.	1.4	33
52	Native chemical ligation of hydrophobic peptides in organic solvents. Journal of Peptide Science, 2010, 16, 558-562.	0.8	32
53	Purification and characterization of an intracellular peroxidase from Streptomyces cyaneus. Applied and Environmental Microbiology, 1992, 58, 916-919.	1.4	31
54	Purification and characterization of two alpha-L-arabinofuranosidases from Streptomyces diastaticus. Applied and Environmental Microbiology, 1992, 58, 1447-1450.	1.4	31

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55	Synthesis of Large-Ring Cyclodextrins by Cyclodextrin Glucanotransferases from Bacterial Isolates. Journal of Inclusion Phenomena and Macrocyclic Chemistry, 2002, 44, 387-390.	1.6	29
56	Identification of extracellular proteins from actinomycetes responsible for the solubilisation of lignocellulose. Applied Microbiology and Biotechnology, 1988, 28, 276.	1.7	27
57	Utilization of lignocellulose from barley straw by actinomycetes. Applied Microbiology and Biotechnology, 1989, 30, 103.	1.7	27
58	Separation and analysis of cyclodextrins by capillary zone electrophoresis. Carbohydrate Research, 1997, 298, 59-63.	1.1	27
59	An evaluation of open and closed systems for in vitro protein digestion of fish meal. Aquaculture Nutrition, 1997, 3, 153-159.	1.1	27
60	Recovery of mangostins from Garcinia mangostana peels with an aqueous micellar biphasic system. Food and Bioproducts Processing, 2017, 102, 233-240.	1.8	27
61	Xylanolytic enzyme activities produced by mesophilic and thermophilic actinomycetes grown on graminaceous xylan and lignocellulose. FEMS Microbiology Letters, 1988, 55, 181-186.	0.7	26
62	H and¹³C NMR Spectroscopic Study of Extracts from Corks of<i>Rubus idaeus, Solanum tuberosum</i>, and<i>Quercus suber</i>. Holzforschung, 1985, 39, 45-49.	0.9	25
63	Purification and characterisation of a malto-oligosaccharide-forming amylase active at high pH from Bacillus clausii BT-21. Carbohydrate Research, 2000, 329, 97-107.	1.1	25
64	Biocatalytic acylation of carbohydrates with fatty acids from palm fatty acid distillates. Journal of Industrial Microbiology and Biotechnology, 2006, 33, 338-342.	1.4	23
65	Biocatalytic surface modification of knitted fabrics made of poly (ethylene terephthalate) with hydrolytic enzymes from<i>Thermobifida fusca</i>KW3b. Biocatalysis and Biotransformation, 2008, 26, 357-364.	1.1	22
66	Altered Large-Ring Cyclodextrin Product Profile Due to a Mutation at Tyr-172 in the Amylomaltase of Corynebacterium glutamicum. Applied and Environmental Microbiology, 2012, 78, 7223-7228.	1.4	22
67	Engineered cyclodextrin glucanotransferases from <i>Bacillus</i> sp. Gâ€825â€6 produce largeâ€ring cyclodextrins with high specificity. MicrobiologyOpen, 2019, 8, e00757.	1.2	22
68	Degradation of Raspberry Suberin by Fusarium solani f. sp. Pisi and Armillaria mellea. Journal of Phytopathology, 1984, 110, 192-199.	0.5	21
69	Purification and characterization of lipase from newly isolated Burkholderia multivorans PSU-AH130 and its application for biodiesel production. Annals of Microbiology, 2012, 62, 1615-1624.	1.1	21
70	Antarctic Polyester Hydrolases Degrade Aliphatic and Aromatic Polyesters at Moderate Temperatures. Applied and Environmental Microbiology, 2022, 88, AEM0184221.	1.4	21
71	Deinking of soy bean oil based ink printed paper with lipases and a neutral surfactant. Journal of Biotechnology, 1999, 67, 229-236.	1.9	20
72	Improved endoxylanase production and colony morphology of Aspergillus niger DSM 26641 by Î³-ray induced mutagenesis. Biochemical Engineering Journal, 2015, 94, 9-14.	1.8	19

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73	Fast Turbidimetric Assay for Analyzing the Enzymatic Hydrolysis of Polyethylene Terephthalate Model Substrates. Biotechnology Journal, 2019, 14, e1800272.	1.8	19
74	Stepwise errorâ€prone PCR and DNA shuffling changed the pH activity range and product specificity of the cyclodextrin glucanotransferase from an alkaliphilic<i>Bacillus</i> sp. FEBS Open Bio, 2015, 5, 528-534.	1.0	17
75	Catalytic reduction of 4-nitrophenol with gold nanoparticles stabilized by large-ring cyclodextrins. New Journal of Chemistry, 2020, 44, 21007-21011.	1.4	17
76	Production of cyclomaltononaose (Î´-cyclodextrin) by cyclodextrin glycosyltransferases from Bacillus spp. and bacterial isolates. Applied Microbiology and Biotechnology, 1998, 50, 314-317.	1.7	16
77	Effects of Low Molecular Weight Carbohydrates on Farinograph Characteristics and Staling Endotherms of Wheat Flour-Water Doughs. Cereal Chemistry, 1999, 76, 227-230.	1.1	16
78	Fractionation of homologous CD6 to CD60 cyclodextrin mixture by ultrafiltration and nanofiltration. Journal of Membrane Science, 2011, 374, 129-137.	4.1	16
79	Change of the Product Specificity of a Cyclodextrin Glucanotransferase by Semi-Rational Mutagenesis to Synthesize Large-Ring Cyclodextrins. Catalysts, 2019, 9, 242.	1.6	16
80	Hemicellulase production by Aspergillus niger DSM 26641 in hydrothermal palm oil empty fruit bunch hydrolysate and transcriptome analysis. Journal of Bioscience and Bioengineering, 2014, 118, 696-701.	1.1	15
81	Efficient extracellular recombinant production and purification of a Bacillus cyclodextrin glucanotransferase in Escherichia coli. Microbial Cell Factories, 2017, 16, 87.	1.9	15
82	Sugar Ester Synthesis by Thermostable Lipase from Streptomyces thermocarboxydus ME168. Applied Biochemistry and Biotechnology, 2012, 166, 1969-1982.	1.4	14
83	Two-step enzymatic synthesis of maltooligosaccharide esters. Carbohydrate Research, 2000, 329, 57-63.	1.1	13
84	Direct recovery of mangostins from Garcinia mangostana pericarps using cellulase-assisted aqueous micellar biphasic system with recyclable surfactant. Journal of Bioscience and Bioengineering, 2018, 126, 507-513.	1.1	13
85	Real-Time Noninvasive Analysis of Biocatalytic PET Degradation. ACS Catalysis, 2022, 12, 25-35.	5.5	13
86	Comparison of chemical, electrophoretic and in vitro digestion methods for predicting fish meal nutritive quality. Aquaculture Nutrition, 1998, 4, 233-239.	1.1	12
87	Molecular imprinting of cyclodextrin glycosyltransferases fromPaenibacillussp. A11 andBacillus maceranswith Î³-cyclodextrin. FEBS Journal, 2007, 274, 1001-1010.	2.2	12
88	Hydrolysis of Cutin by PETâ€Hydrolases. Macromolecular Symposia, 2010, 296, 342-346.	0.4	12
89	Degradation of a non-phenolic arylglycerol Î²-aryl ether byStreptomyces cyaneus. FEBS Letters, 1988, 239, 5-7.	1.3	10
90	Conventional and high-performance size-exclusion chromatography of graminaceous lignin-carbohydrate complexes. Methods in Enzymology, 1988, 161, 191-199.	0.4	10

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91	Domain shuffling of cyclodextrin glucanotransferases for tailored product specificity and thermal stability. FEBS Open Bio, 2019, 9, 384-395.	1.0	10
92	Decolorization of industrial effluents containing reactive dyes by actinomycetes. FEMS Microbiology Letters, 1993, 107, 157-161.	0.7	10
93	Production of chitinases byAphanocladium albumgrown on crystalline and colloidal chitin. FEMS Microbiology Letters, 1992, 99, 213-216.	0.7	8
94	Crystallization and preliminary crystallographic analysis of two Î²-mannanase isoforms from Thermomonospora fusca KW3. Acta Crystallographica Section D: Biological Crystallography, 1996, 52, 1224-1225.	2.5	8
95	Altered product specificity of a cyclodextrin glycosyltransferase by molecular imprinting with cyclomaltododecaose. Journal of Molecular Recognition, 2010, 23, 480-485.	1.1	8
96	Production of Large-Ring Cyclodextrins Composed of 9 ~ 21 Î±-D-Glucopyranose Units by Cyclodextrin Glucanotransferase â€" Effects of Incubation Temperature and Molecular Weight of Amylose. Heterocycles, 2007, 74, 991.	0.4	8
97	Production of thermostable xylanases in batch and continuous culture by Thermomonospora fusca KW 3. Applied Microbiology and Biotechnology, 1992, 37, 416.	1.7	7
98	Molecular mutagenesis at Tyr-101 of the amylomaltase transcribed from a gene isolated from soil DNA. Applied Biochemistry and Microbiology, 2014, 50, 243-252.	0.3	7
99	The production of immobilized whole-cell lipase from Aspergillus nomius ST57 and the enhancement of the synthesis of fatty acid methyl esters using a two-step reaction. Journal of Molecular Catalysis B: Enzymatic, 2016, 133, S128-S136.	1.8	7
100	<i>Pantoea</i> sp. P37 as a novel nonpathogenic host for the heterologous production of rhamnolipids. MicrobiologyOpen, 2020, 9, e1019.	1.2	7
101	Direct cloning of gene encoding a novel amylomaltase from soil bacterial DNA for large-ring cyclodextrin production. Applied Biochemistry and Microbiology, 2014, 50, 17-24.	0.3	6
102	Isolation of Filamentous Fungi Exhibiting High Endoxylanase Activity in Lignocellulose Hydrolysate. Applied Biochemistry and Biotechnology, 2015, 175, 2066-2074.	1.4	6
103	Dechlorination of high-molecular-mass compounds in spent sulphite bleach effluents by free and immobilized cells of streptomycetes. Applied Microbiology and Biotechnology, 1993, 39, 418.	1.7	5
104	Capillary electrophoretic separation of Î±-, Î²-, Î³- and Î´-cyclodextrins using a dual electrolyte system. Journal of Chromatography A, 1998, 811, 193-199.	1.8	5
105	Plastic Biodegradation: Challenges and Opportunities. , 2019, , 333-361.		5
106	Biochemical properties and cyclodextrin production profiles of isoforms of cyclodextrin glycosyltransferase. Journal of Inclusion Phenomena and Macrocyclic Chemistry, 2011, 70, 377-383.	1.6	4
107	Largeâ€Ring Cyclodextrins as Chiral Selectors for Enantiomeric Pharmaceuticals. Angewandte Chemie, 2019, 131, 6477-6480.	1.6	4
108	Evidence of the Involvement of Asparagine Deamidation in the Formation of Cyclodextrin Glycosyltransferase Isoforms in Paenibacillus sp. RB01. Molecular Biotechnology, 2011, 47, 234-242.	1.3	3

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109	Enzymatic surface treatment of poly (3â€hydroxybutyrate) (<scp>PHB</scp>), and poly (3â€hydroxybutyrateâ€coâ€3â€hydroxyvalerate) (<scp>PHBV</scp>). Journal of Chemical Technology and Biotechnology, 2015, 90, 2036-2039.	1.6	3
110	Degradation of Plastics by Fungi. , 2021, , 650-661.		2
111	Multi-wavelength colorimetric determination of large-ring cyclodextrin content for the cyclization activity of 4-Î±-glucanotransferase. Carbohydrate Polymers, 2015, 122, 329-335.	5.1	1
112	Rapid detection of malto-oligosaccharide-forming bacterial amylases by high performance anion-exchange chromatography. Letters in Applied Microbiology, 2000, 30, 312-316.	1.0	0
113	Vergleich von Polyethylenterephthalat-hydrolysierenden Cutinase-Varianten aus Thermobifida fusca. Chemie-Ingenieur-Technik, 2010, 82, 1487-1487.	0.4	0
114	Biocatalytic degradation of synthetic polymers: pushing the limits of performance of polyester hydrolases. New Biotechnology, 2016, 33, S17.	2.4	0