

Wolfgang Zimmermann

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115
papers

4,452
citations

37
h-index

63
g-index

121
ext. papers

5,321
ext. citations

4.5
avg, IF

5.91
L-index

#	Paper	IF	Citations
115	Microbial enzymes for the recycling of recalcitrant petroleum-based plastics: how far are we?. <i>Microbial Biotechnology</i> , 2017 , 10, 1308-1322	6.3	297
114	Enzymatic Surface Hydrolysis of PET: Effect of Structural Diversity on Kinetic Properties of Cutinases from <i>Thermobifida</i> . <i>Macromolecules</i> , 2011 , 44, 4632-4640	5.5	205
113	Degradation of lignin by bacteria. <i>Journal of Biotechnology</i> , 1990 , 13, 119-130	3.7	187
112	Biocatalysis as a green route for recycling the recalcitrant plastic polyethylene terephthalate. <i>Microbial Biotechnology</i> , 2017 , 10, 1302-1307	6.3	151
111	High-resolution native and complex structures of thermostable beta-mannanase from <i>Thermomonospora fusca</i> - substrate specificity in glycosyl hydrolase family 5. <i>Structure</i> , 1998 , 6, 1433-44	5.2	148
110	New Insights into the Function and Global Distribution of Polyethylene Terephthalate (PET)-Degrading Bacteria and Enzymes in Marine and Terrestrial Metagenomes. <i>Applied and Environmental Microbiology</i> , 2018 , 84,	4.8	134
109	Structural and functional studies on a thermostable polyethylene terephthalate degrading hydrolase from <i>Thermobifida fusca</i> . <i>Applied Microbiology and Biotechnology</i> , 2014 , 98, 7815-23	5.7	124
108	Cyclodextrin glucanotransferase: from gene to applications. <i>Applied Microbiology and Biotechnology</i> , 2005 , 66, 475-85	5.7	122
107	Optimization of carbohydrate fatty acid ester synthesis in organic media by a lipase from <i>Candida antarctica</i> . <i>Biotechnology and Bioengineering</i> , 2001 , 74, 483-91	4.9	122
106	Engineered bacterial polyester hydrolases efficiently degrade polyethylene terephthalate due to relieved product inhibition. <i>Biotechnology and Bioengineering</i> , 2016 , 113, 1658-65	4.9	111
105	Effect of hydrolysis products on the enzymatic degradation of polyethylene terephthalate nanoparticles by a polyester hydrolase from <i>Thermobifida fusca</i> . <i>Biochemical Engineering Journal</i> , 2015 , 93, 222-228	4.2	98
104	Decolorization of industrial effluents containing reactive dyes by actinomycetes. <i>FEMS Microbiology Letters</i> , 1993 , 107, 157-61	2.9	98
103	Lipase-catalysed synthesis of glucose fatty acid esters in tert-butanol. <i>Biotechnology Letters</i> , 1999 , 21, 275-280	3	97
102	A dual enzyme system composed of a polyester hydrolase and a carboxylesterase enhances the biocatalytic degradation of polyethylene terephthalate films. <i>Biotechnology Journal</i> , 2016 , 11, 1082-7	5.6	87
101	Increase of the hydrophilicity of polyethylene terephthalate fibres by hydrolases from <i>Thermomonospora fusca</i> and <i>Fusarium solani</i> f. sp. <i>psi</i> . <i>Biotechnology Letters</i> , 2006 , 28, 681-5	3	84
100	Biocatalytic Degradation Efficiency of Postconsumer Polyethylene Terephthalate Packaging Determined by Their Polymer Microstructures. <i>Advanced Science</i> , 2019 , 6, 1900491	13.6	83
99	Functional characterization and structural modeling of synthetic polyester-degrading hydrolases from <i>Thermomonospora curvata</i> . <i>AMB Express</i> , 2014 , 4, 44	4.1	78

98	Ca ²⁺ and Mg ²⁺ binding site engineering increases the degradation of polyethylene terephthalate films by polyester hydrolases from <i>Thermobifida fusca</i> . <i>Biotechnology Journal</i> , 2015 , 10, 592-8	5.6	77
97	Comparison of the hydrolysis of polyethylene terephthalate fibers by a hydrolase from <i>Fusarium oxysporum</i> LCH I and <i>Fusarium solani</i> f. sp. pisi. <i>Biotechnology Journal</i> , 2007 , 2, 361-4	5.6	77
96	High-affinity host-guest chemistry of large-ring cyclodextrins. <i>Organic and Biomolecular Chemistry</i> , 2016 , 14, 7702-6	3.9	68
95	Biocatalytic modification of polyethylene terephthalate fibres by esterases from actinomycete isolates. <i>Biocatalysis and Biotransformation</i> , 2004 , 22, 347-351	2.5	68
94	Degradation of Polyester Polyurethane by Bacterial Polyester Hydrolases. <i>Polymers</i> , 2017 , 9,	4.5	67
93	Microbial Genes for a Circular and Sustainable Bio-PET Economy. <i>Genes</i> , 2019 , 10,	4.2	64
92	Synthetic polyester-hydrolyzing enzymes from thermophilic actinomycetes. <i>Advances in Applied Microbiology</i> , 2014 , 89, 267-305	4.9	63
91	A disulfide bridge in the calcium binding site of a polyester hydrolase increases its thermal stability and activity against polyethylene terephthalate. <i>FEBS Open Bio</i> , 2016 , 6, 425-32	2.7	61
90	Biochemical characterization of the cutinases from <i>Thermobifida fusca</i> . <i>Journal of Molecular Catalysis B: Enzymatic</i> , 2010 , 63, 121-127		59
89	High level expression of a hydrophobic poly(ethylene terephthalate)-hydrolyzing carboxylesterase from <i>Thermobifida fusca</i> KW3 in <i>Escherichia coli</i> BL21(DE3). <i>Journal of Biotechnology</i> , 2010 , 146, 100-4	3.7	55
88	Inclusion complex formation constants of α , β and γ cyclodextrins determined with capillary zone electrophoresis. <i>Carbohydrate Research</i> , 1998 , 309, 153-159	2.9	55
87	Hydrolysis of cyclic poly(ethylene terephthalate) trimers by a carboxylesterase from <i>Thermobifida fusca</i> KW3. <i>Applied Microbiology and Biotechnology</i> , 2010 , 87, 1753-64	5.7	54
86	β -Galactooligosaccharide synthesis with β -galactosidases from <i>Sulfolobus solfataricus</i> , <i>Aspergillus oryzae</i> , and <i>Escherichia coli</i> . <i>Enzyme and Microbial Technology</i> , 1999 , 25, 509-516	3.8	54
85	Enzymatic Synthesis and Analysis of Large-Ring Cyclodextrins. <i>Australian Journal of Chemistry</i> , 2002 , 55, 39	1.2	53
84	Enzymatic hydrolysis of polyethylene terephthalate films in an ultrafiltration membrane reactor. <i>Journal of Membrane Science</i> , 2015 , 494, 182-187	9.6	49
83	Conformational fitting of a flexible oligomeric substrate does not explain the enzymatic PET degradation. <i>Nature Communications</i> , 2019 , 10, 5581	17.4	48
82	Turbidimetric analysis of the enzymatic hydrolysis of polyethylene terephthalate nanoparticles. <i>Journal of Molecular Catalysis B: Enzymatic</i> , 2014 , 103, 72-78		46
81	Enzymes for the biofunctionalization of poly(ethylene terephthalate). <i>Advances in Biochemical Engineering/Biotechnology</i> , 2011 , 125, 97-120	1.7	42

80	Towards bio-upcycling of polyethylene terephthalate. <i>Metabolic Engineering</i> , 2021 , 66, 167-178	9.7	42
79	A high-throughput assay for enzymatic polyester hydrolysis activity by fluorimetric detection. <i>Biotechnology Journal</i> , 2012 , 7, 1517-21	5.6	37
78	Effect of the reaction temperature on the transglycosylation reactions catalyzed by the cyclodextrin glucanotransferase from <i>Bacillus macerans</i> for the synthesis of large-ring cyclodextrins. <i>Tetrahedron</i> , 2004 , 60, 799-806	2.4	37
77	Effect of Tris, MOPS, and phosphate buffers on the hydrolysis of polyethylene terephthalate films by polyester hydrolases. <i>FEBS Open Bio</i> , 2016 , 6, 919-27	2.7	37
76	Analysis and characterisation of cyclodextrins and their inclusion complexes by affinity capillary electrophoresis. <i>Journal of Chromatography A</i> , 1999 , 836, 3-14	4.5	35
75	Suberin-grown <i>Fusarium solani</i> f. sp. <i>pisi</i> generates a cutinase-like esterase which depolymerizes the aliphatic components of suberin. <i>Physiological Plant Pathology</i> , 1984 , 24, 143-155		34
74	Amylose recognition and ring-size determination of amylomaltase. <i>Science Advances</i> , 2017 , 3, e1601386	14.3	33
73	Purification and characterisation of cyclodextrin glycosyltransferase from <i>Paenibacillus</i> sp. F8. <i>Carbohydrate Research</i> , 1998 , 310, 211-219	2.9	31
72	Effect of ethanol on the synthesis of large-ring cyclodextrins by cyclodextrin glucanotransferases. <i>Journal of Inclusion Phenomena and Macrocyclic Chemistry</i> , 2007 , 57, 95-99		31
71	A novel amylomaltase from <i>Corynebacterium glutamicum</i> and analysis of the large-ring cyclodextrin products. <i>Journal of Inclusion Phenomena and Macrocyclic Chemistry</i> , 2011 , 70, 369-375		29
70	Native chemical ligation of hydrophobic peptides in organic solvents. <i>Journal of Peptide Science</i> , 2010 , 16, 558-62	2.1	29
69	Purification and characterization of two alpha-L-arabinofuranosidases from <i>Streptomyces diastaticus</i> . <i>Applied and Environmental Microbiology</i> , 1992 , 58, 1447-50	4.8	26
68	Recovery of mangostins from <i>Garcinia mangostana</i> peels with an aqueous micellar biphasic system. <i>Food and Bioproducts Processing</i> , 2017 , 102, 233-240	4.9	24
67	Xylanolytic enzyme activities produced by mesophilic and thermophilic actinomycetes grown on graminaceous xylan and lignocellulose. <i>FEMS Microbiology Letters</i> , 1988 , 55, 181-186	2.9	24
66	H and ¹³ C NMR Spectroscopic Study of Extracts from Corks of <i>Rubus idaeus</i> , <i>Solanum tuberosum</i> , and <i>Quercus suber</i> . <i>Holzforschung</i> , 1985 , 39, 45-49	2	24
65	Purification and characterization of an intracellular peroxidase from <i>Streptomyces cyaneus</i> . <i>Applied and Environmental Microbiology</i> , 1992 , 58, 916-9	4.8	24
64	Separation and analysis of cyclodextrins by capillary zone electrophoresis. <i>Carbohydrate Research</i> , 1997 , 298, 59-63	2.9	23
63	An evaluation of open and closed systems for in vitro protein digestion of fish meal. <i>Aquaculture Nutrition</i> , 1997 , 3, 153-159	3.2	23

62	Synthesis of Large-Ring Cyclodextrins by Cyclodextrin Glucanotransferases from Bacterial Isolates. <i>Journal of Inclusion Phenomena and Macrocyclic Chemistry</i> , 2002 , 44, 387-390		23
61	Purification and characterisation of a malto-oligosaccharide-forming amylase active at high pH from <i>Bacillus clausii</i> BT-21. <i>Carbohydrate Research</i> , 2000 , 329, 97-107	2.9	23
60	Degradation of organochlorine compounds in spent sulfite bleach plant effluents by actinomycetes. <i>Applied and Environmental Microbiology</i> , 1991 , 57, 2858-63	4.8	23
59	Utilization of lignocellulose from barley straw by actinomycetes. <i>Applied Microbiology and Biotechnology</i> , 1989 , 30, 103	5.7	22
58	Large-Ring Cyclodextrins as Chiral Selectors for Enantiomeric Pharmaceuticals. <i>Angewandte Chemie - International Edition</i> , 2019 , 58, 6411-6414	16.4	21
57	UV Pretreatment Impairs the Enzymatic Degradation of Polyethylene Terephthalate. <i>Frontiers in Microbiology</i> , 2020 , 11, 689	5.7	21
56	Plastic Biodegradation: Challenges and Opportunities 2018 , 1-29		20
55	Degradation of Raspberry Suberin by <i>Fusarium solani</i> f. sp. Pisi and <i>Armillaria mellea</i> . <i>Journal of Phytopathology</i> , 1984 , 110, 192-199	1.8	20
54	Biocatalytic surface modification of knitted fabrics made of poly (ethylene terephthalate) with hydrolytic enzymes from <i>Thermobifida fusca</i> KW3b. <i>Biocatalysis and Biotransformation</i> , 2008 , 26, 357-364	2.5	19
53	Biocatalytic acylation of carbohydrates with fatty acids from palm fatty acid distillates. <i>Journal of Industrial Microbiology and Biotechnology</i> , 2006 , 33, 338-42	4.2	19
52	Identification of extracellular proteins from actinomycetes responsible for the solubilisation of lignocellulose. <i>Applied Microbiology and Biotechnology</i> , 1988 , 28, 276	5.7	19
51	Altered large-ring cyclodextrin product profile due to a mutation at Tyr-172 in the amyloamylase of <i>Corynebacterium glutamicum</i> . <i>Applied and Environmental Microbiology</i> , 2012 , 78, 7223-8	4.8	18
50	Purification and characterization of lipase from newly isolated <i>Burkholderia multivorans</i> PSU-AH130 and its application for biodiesel production. <i>Annals of Microbiology</i> , 2012 , 62, 1615-1624	3.2	18
49	Improved endoxylanase production and colony morphology of <i>Aspergillus niger</i> DSM 26641 by γ-ray induced mutagenesis. <i>Biochemical Engineering Journal</i> , 2015 , 94, 9-14	4.2	15
48	Fractionation of homologous CD6 to CD60 cyclodextrin mixture by ultrafiltration and nanofiltration. <i>Journal of Membrane Science</i> , 2011 , 374, 129-137	9.6	15
47	Deinking of soy bean oil based ink printed paper with lipases and a neutral surfactant. <i>Journal of Biotechnology</i> , 1999 , 67, 229-236	3.7	15
46	Biocatalytic recycling of polyethylene terephthalate plastic. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2020 , 378, 20190273	3	15
45	Stepwise error-prone PCR and DNA shuffling changed the pH activity range and product specificity of the cyclodextrin glucanotransferase from an alkaliphilic <i>Bacillus</i> sp. <i>FEBS Open Bio</i> , 2015 , 5, 528-34	2.7	14

44	Hemicellulase production by <i>Aspergillus niger</i> DSM 26641 in hydrothermal palm oil empty fruit bunch hydrolysate and transcriptome analysis. <i>Journal of Bioscience and Bioengineering</i> , 2014 , 118, 696-701	2.3	14
43	Production of cyclomaltonaose (delta-cyclodextrin) by cyclodextrin glycosyltransferases from <i>Bacillus</i> spp. and bacterial isolates. <i>Applied Microbiology and Biotechnology</i> , 1998 , 50, 314-7	5.7	14
42	Effects of Low Molecular Weight Carbohydrates on Farinograph Characteristics and Staling Endotherms of Wheat Flour-Water Doughs. <i>Cereal Chemistry</i> , 1999 , 76, 227-230	2.4	14
41	Sugar ester synthesis by thermostable lipase from <i>Streptomyces thermocarboxydus</i> ME168. <i>Applied Biochemistry and Biotechnology</i> , 2012 , 166, 1969-82	3.2	12
40	Hydrolysis of Cutin by PET-Hydrolases. <i>Macromolecular Symposia</i> , 2010 , 296, 342-346	0.8	12
39	Two-step enzymatic synthesis of maltooligosaccharide esters. <i>Carbohydrate Research</i> , 2000 , 329, 57-63	2.9	12
38	Engineered cyclodextrin glucanotransferases from <i>Bacillus</i> sp. G-825-6 produce large-ring cyclodextrins with high specificity. <i>MicrobiologyOpen</i> , 2019 , 8, e00757	3.4	12
37	Comparison of chemical, electrophoretic and in vitro digestion methods for predicting fish meal nutritive quality. <i>Aquaculture Nutrition</i> , 1998 , 4, 233-239	3.2	11
36	Molecular imprinting of cyclodextrin glycosyltransferases from <i>Paenibacillus</i> sp. A11 and <i>Bacillus</i> macerans with gamma-cyclodextrin. <i>FEBS Journal</i> , 2007 , 274, 1001-10	5.7	11
35	Fast Turbidimetric Assay for Analyzing the Enzymatic Hydrolysis of Polyethylene Terephthalate Model Substrates. <i>Biotechnology Journal</i> , 2019 , 14, e1800272	5.6	11
34	Degradation of a non-phenolic arylglycerol ether by <i>Streptomyces cyaneus</i> . <i>FEBS Letters</i> , 1988 , 239, 5-7	3.8	10
33	Change of the Product Specificity of a Cyclodextrin Glucanotransferase by Semi-Rational Mutagenesis to Synthesize Large-Ring Cyclodextrins. <i>Catalysts</i> , 2019 , 9, 242	4	9
32	Efficient extracellular recombinant production and purification of a <i>Bacillus</i> cyclodextrin glucanotransferase in <i>Escherichia coli</i> . <i>Microbial Cell Factories</i> , 2017 , 16, 87	6.4	9
31	Conventional and high-performance size-exclusion chromatography of graminaceous lignin-carbohydrate complexes. <i>Methods in Enzymology</i> , 1988 , 161, 191-199	1.7	9
30	Bio-upcycling of polyethylene terephthalate		9
29	Direct recovery of mangostins from <i>Garcinia mangostana</i> pericarps using cellulase-assisted aqueous micellar biphasic system with recyclable surfactant. <i>Journal of Bioscience and Bioengineering</i> , 2018 , 126, 507-513	3.3	8
28	Altered product specificity of a cyclodextrin glycosyltransferase by molecular imprinting with cyclomaltododecaose. <i>Journal of Molecular Recognition</i> , 2010 , 23, 480-5	2.6	8
27	Production of chitinases by <i>Aphanocladium album</i> grown on crystalline and colloidal chitin. <i>FEMS Microbiology Letters</i> , 1992 , 99, 213-216	2.9	7

26	Production of Large-Ring Cyclodextrins Composed of 9 ~ 21 D-Glucopyranose Units by Cyclodextrin Glucanotransferase [Effects of Incubation Temperature and Molecular Weight of Amylose. <i>Heterocycles</i> , 2007 , 74, 991	0.8	7
25	Isolation of filamentous fungi exhibiting high endoxylanase activity in lignocellulose hydrolysate. <i>Applied Biochemistry and Biotechnology</i> , 2015 , 175, 2066-74	3.2	6
24	Molecular mutagenesis at Tyr-101 of the amylomaltase transcribed from a gene isolated from soil DNA. <i>Applied Biochemistry and Microbiology</i> , 2014 , 50, 243-252	1.1	6
23	Crystallization and preliminary crystallographic analysis of two beta-mannanase isoforms from <i>Thermomonospora fusca</i> KW3. <i>Acta Crystallographica Section D: Biological Crystallography</i> , 1996 , 52, 1224-5		6
22	Catalytic reduction of 4-nitrophenol with gold nanoparticles stabilized by large-ring cyclodextrins. <i>New Journal of Chemistry</i> , 2020 , 44, 21007-21011	3.6	6
21	Low Carbon Footprint Recycling of Post-Consumer PET Plastic with a Metagenomic Polyester Hydrolase. <i>ChemSusChem</i> , 2021 ,	8.3	6
20	Domain shuffling of cyclodextrin glucanotransferases for tailored product specificity and thermal stability. <i>FEBS Open Bio</i> , 2019 , 9, 384-395	2.7	6
19	Direct cloning of gene encoding a novel amylomaltase from soil bacterial DNA for large-ring cyclodextrin production. <i>Applied Biochemistry and Microbiology</i> , 2014 , 50, 17-24	1.1	5
18	Production of thermostable xylanases in batch and continuous culture by <i>Thermomonospora fusca</i> KW 3. <i>Applied Microbiology and Biotechnology</i> , 1992 , 37, 416	5.7	5
17	Dechlorination of high-molecular-mass compounds in spent sulphite bleach effluents by free and immobilized cells of streptomycetes. <i>Applied Microbiology and Biotechnology</i> , 1993 , 39, 418	5.7	5
16	The production of immobilized whole-cell lipase from <i>Aspergillus nomius</i> ST57 and the enhancement of the synthesis of fatty acid methyl esters using a two-step reaction. <i>Journal of Molecular Catalysis B: Enzymatic</i> , 2016 , 133, S128-S136		5
15	Biochemical properties and cyclodextrin production profiles of isoforms of cyclodextrin glycosyltransferase. <i>Journal of Inclusion Phenomena and Macrocyclic Chemistry</i> , 2011 , 70, 377-383		4
14	Capillary electrophoretic separation of α , β and γ cyclodextrins using a dual electrolyte system. <i>Journal of Chromatography A</i> , 1998 , 811, 193-199	4.5	4
13	Enzymatic surface treatment of poly (3-hydroxybutyrate) (PHB), and poly (3-hydroxybutyrate-co-3-hydroxyvalerate) (PHBV). <i>Journal of Chemical Technology and Biotechnology</i> , 2015 , 90, 2036-2039	3.5	3
12	Evidence of the involvement of asparagine deamidation in the formation of cyclodextrin glycosyltransferase isoforms in <i>Paenibacillus</i> sp. RB01. <i>Molecular Biotechnology</i> , 2011 , 47, 234-42	3	3
11	Interference of Cyclodextrins with Amylolytic Activity Assays of Cyclodextrin Glycosyltransferases. <i>Starch/Staerke</i> , 1997 , 49, 250-253	2.3	3
10	Large-Ring Cyclodextrins as Chiral Selectors for Enantiomeric Pharmaceuticals. <i>Angewandte Chemie</i> , 2019 , 131, 6477-6480	3.6	2
9	<i>Pantoea</i> sp. P37 as a novel nonpathogenic host for the heterologous production of rhamnolipids. <i>MicrobiologyOpen</i> , 2020 , 9, e1019	3.4	2

8	Plastic Biodegradation: Challenges and Opportunities 2019 , 333-361		1
7	Multi-wavelength colorimetric determination of large-ring cyclodextrin content for the cyclization activity of 4- β -glucanotransferase. <i>Carbohydrate Polymers</i> , 2015 , 122, 329-35	10.3	1
6	Antarctic polyester hydrolases degrade aliphatic and aromatic polyesters at moderate temperatures. <i>Applied and Environmental Microbiology</i> , 2021 , AEM0184221	4.8	1
5	Real-Time Noninvasive Analysis of Biocatalytic PET Degradation. <i>ACS Catalysis</i> , 2022 , 12, 25-35	13.1	1
4	Degradation of Plastics by Fungi 2021 , 650-661		0
3	Von Plastikmüll zu Plastikwertstoffen [Polymerrecycling neu gedacht. <i>BioSpektrum</i> , 2020 , 26, 212-214	0.1	
2	Vergleich von Polyethylenterephthalat-hydrolysierenden Cutinase-Varianten aus <i>Thermobifida fusca</i> . <i>Chemie-Ingenieur-Technik</i> , 2010 , 82, 1487-1487	0.8	
1	Rapid detection of malto-oligosaccharide-forming bacterial amylases by high performance anion-exchange chromatography. <i>Letters in Applied Microbiology</i> , 2000 , 30, 312-6	2.9	