Charles E Wyman

List of Publications by Year
in descending order

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113

papers

26,864

citations

14614

66

h-index

22102

113

g-index

140

all docs

140

docs citations

140

times ranked

16975

citing authors

#	Article	IF	Citations
1	Features of promising technologies for pretreatment of lignocellulosic biomass. Bioresource Technology, 2005, 96, 673-686.	4.8	5,057
2	Lignin Valorization: Improving Lignin Processing in the Biorefinery. Science, 2014, 344, 1246843.	6.0	2,994
3	Pretreatment: the key to unlocking lowâ€cost cellulosic ethanol. Biofuels, Bioproducts and Biorefining, 2008, 2, 26-40.	1.9	1,247
4	Coordinated development of leading biomass pretreatment technologies. Bioresource Technology, 2005, 96, 1959-1966.	4.8	1,199
5	How biotech can transform biofuels. Nature Biotechnology, 2008, 26, 169-172.	9.4	984
6	Physical and chemical characterizations of corn stover and poplar solids resulting from leading pretreatment technologies. Bioresource Technology, 2009, 100, 3948-3962.	4.8	749
7	Combined sugar yields for dilute sulfuric acid pretreatment of corn stover followed by enzymatic hydrolysis of the remaining solids. Bioresource Technology, 2005, 96, 1967-1977.	4.8	655
8	Biocommodity Engineering. Biotechnology Progress, 1999, 15, 777-793.	1.3	636
9	What is (and is not) vital to advancing cellulosic ethanol. Trends in Biotechnology, 2007, 25, 153-157.	4.9	540
10	Lignin content in natural <i>Populus</i> variants affects sugar release. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 6300-6305.	3.3	515
11	BIOMASSETHANOL: Technical Progress, Opportunities, and Commercial Challenges. Annual Review of Environment and Resources, 1999, 24, 189-226.	1.2	487
12	Comparative sugar recovery data from laboratory scale application of leading pretreatment technologies to corn stover. Bioresource Technology, 2005, 96, 2026-2032.	4.8	470
13	Xylooligomers are strong inhibitors of cellulose hydrolysis by enzymes. Bioresource Technology, 2010, 101, 9624-9630.	4.8	459
14	Enzymatic hydrolysis of cellulosic biomass. Biofuels, 2011, 2, 421-449.	1.4	450
15	BSA treatment to enhance enzymatic hydrolysis of cellulose in lignin containing substrates. Biotechnology and Bioengineering, 2006, 94, 611-617.	1.7	438
16	Ethanol from lignocellulosic biomass: Technology, economics, and opportunities. Bioresource Technology, 1994, 50, 3-15.	4.8	422
17	Integrated furfural production as a renewable fuel and chemical platform from lignocellulosic biomass. Journal of Chemical Technology and Biotechnology, 2014, 89, 2-10.	1.6	389
18	Production of renewable jet fuel range alkanes and commodity chemicals from integrated catalytic processing of biomass. Energy and Environmental Science, 2014, 7, 1500-1523.	15.6	342

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19	Cellulosic ethanol: status and innovation. Current Opinion in Biotechnology, 2017, 45, 202-211.	3.3	316
20	Comparative sugar recovery and fermentation data following pretreatment of poplar wood by leading technologies. Biotechnology Progress, 2009, 25, 333-339.	1.3	269
21	The Effect of Flow Rate of Compressed Hot Water on Xylan, Lignin, and Total Mass Removal from Corn Stover. Industrial & Engineering Chemistry Research, 2003, 42, 5409-5416.	1.8	257
22	Effects of cellulase and xylanase enzymes on the deconstruction of solids from pretreatment of poplar by leading technologies. Biotechnology Progress, 2009, 25, 302-314.	1.3	253
23	Effect of xylanase supplementation of cellulase on digestion of corn stover solids prepared by leading pretreatment technologies. Bioresource Technology, 2009, 100, 4203-4213.	4.8	250
24	THF co-solvent enhances hydrocarbon fuel precursor yields from lignocellulosic biomass. Green Chemistry, 2013, 15, 3140.	4.6	228
25	Investigating plant cell wall components that affect biomass recalcitrance in poplar and switchgrass. Energy and Environmental Science, 2013, 6, 898.	15.6	220
26	Investigation of lignin deposition on cellulose during hydrothermal pretreatment, its effect on cellulose hydrolysis, and underlying mechanisms. Biotechnology and Bioengineering, 2014, 111, 485-492.	1.7	214
27	Cellulose and Hemicellulose Hydrolysis Models for Application to Current and Novel Pretreatment Processes. Applied Biochemistry and Biotechnology, 2000, 84-86, 81-96.	1.4	205
28	A comparative study of ethanol production using dilute acid, ionic liquid and AFEXâ„¢ pretreated corn stover. Biotechnology for Biofuels, 2014, 7, 72.	6.2	199
29	Cellulase adsorption and relationship to features of corn stover solids produced by leading pretreatments. Biotechnology and Bioengineering, 2009, 103, 252-267.	1.7	196
30	Supplementation with xylanase and Î²-xylosidase to reduce xylo-oligomer and xylan inhibition of enzymatic hydrolysis of cellulose and pretreated corn stover. Biotechnology for Biofuels, 2011, 4, 18.	6.2	192
31	The fate of lignin during hydrothermal pretreatment. Biotechnology for Biofuels, 2013, 6, 110.	6.2	191
32	Potential Synergies and Challenges in Refining Cellulosic Biomass to Fuels, Chemicals, and Power. Biotechnology Progress, 2003, 19, 254-262.	1.3	190
33	Comparison of laboratory delignification methods, their selectivity, and impacts on physiochemical characteristics of cellulosic biomass. Bioresource Technology, 2013, 130, 372-381.	4.8	177
34	Access of cellulase to cellulose and lignin for poplar solids produced by leading pretreatment technologies. Biotechnology Progress, 2009, 25, 807-819.	1.3	175
35	Carbohydrate derivedâ€pseudoâ€lignin can retard cellulose biological conversion. Biotechnology and Bioengineering, 2013, 110, 737-753.	1.7	174
36	Next-generation ammonia pretreatment enhances cellulosic biofuel production. Energy and Environmental Science, 2016, 9, 1215-1223.	15.6	169

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37	4- <i>O</i> -methylation of glucuronic acid in <i>Arabidopsis</i> glucuronoxylan is catalyzed by a domain of unknown function family 579 protein. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 14253-14258.	3.3	164
38	Coupling metal halides with a co-solvent to produce furfural and 5-HMF at high yields directly from lignocellulosic biomass as an integrated biofuels strategy. Green Chemistry, 2014, 16, 3819-3829.	4.6	164
39	Xylose Monomer and Oligomer Yields for Uncatalyzed Hydrolysis of Sugarcane Bagasse Hemicellulose at Varying Solids Concentration. Industrial & Engineering Chemistry Research, 2002, 41, 1454-1461.	1.8	159
40	Coâ€solvent Pretreatment Reduces Costly Enzyme Requirements for High Sugar and Ethanol Yields from Lignocellulosic Biomass. ChemSusChem, 2015, 8, 1716-1725.	3.6	159
41	Depolymerization of lignocellulosic biomass to fuel precursors: maximizing carbon efficiency by combining hydrolysis with pyrolysis. Energy and Environmental Science, 2010, 3, 358.	15.6	157
42	Support Induced Control of Surface Composition in Cuâ€"Ni/TiO₂ Catalysts Enables High Yield Co-Conversion of HMF and Furfural to Methylated Furans. ACS Catalysis, 2017, 7, 4070-4082.	5.5	152
43	Hydrochloric acidâ€catalyzed levulinic acid formation from cellulose: data and kinetic model to maximize yields. AIChE Journal, 2012, 58, 236-246.	1.8	142
44	Chemical transformations of Populus trichocarpa during dilute acid pretreatment. RSC Advances, 2012, 2, 10925.	1.7	138
45	Overcoming factors limiting high-solids fermentation of lignocellulosic biomass to ethanol. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 11673-11678.	3.3	134
46	Cosolvent pretreatment in cellulosic biofuel production: effect of tetrahydrofuran-water on lignin structure and dynamics. Green Chemistry, 2016, 18, 1268-1277.	4.6	122
47	Comparative data on effects of leading pretreatments and enzyme loadings and formulations on sugar yields from different switchgrass sources. Bioresource Technology, 2011, 102, 11052-11062.	4.8	121
48	Renewable gasoline from aqueous phase hydrodeoxygenation of aqueous sugar solutions prepared by hydrolysis of maple wood. Green Chemistry, 2011, 13, 91-101.	4.6	113
49	Effect of lignin content on changes occurring in poplar cellulose ultrastructure during dilute acid pretreatment. Biotechnology for Biofuels, 2014, 7, 150.	6.2	113
50	Strengths, challenges, and opportunities for hydrothermal pretreatment in lignocellulosic biorefineries. Biofuels, Bioproducts and Biorefining, 2018, 12, 125-138.	1.9	111
51	Application of monoclonal antibodies to investigate plant cell wall deconstruction for biofuels production. Energy and Environmental Science, 2011, 4, 4332.	15.6	107
52	Chemical Transformations of Poplar Lignin during Cosolvent Enhanced Lignocellulosic Fractionation Process. ACS Sustainable Chemistry and Engineering, 2018, 6, 8711-8718.	3.2	99
53	An improved method to directly estimate cellulase adsorption on biomass solids. Enzyme and Microbial Technology, 2008, 42, 426-433.	1.6	98
54	Summary of findings from the Biomass Refining Consortium for Applied Fundamentals and Innovation (CAFI): corn stover pretreatment. Cellulose, 2009, 16, 649-659.	2.4	98

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55	Comparative study on enzymatic digestibility of switchgrass varieties and harvests processed by leading pretreatment technologies. Bioresource Technology, 2011, 102, 11089-11096.	4.8	93
56	Toward low-cost biological and hybrid biological/catalytic conversion of cellulosic biomass to fuels. Energy and Environmental Science, 2022, 15, 938-990.	15.6	93
57	Local Phase Separation of Co-solvents Enhances Pretreatment of Biomass for Bioenergy Applications. Journal of the American Chemical Society, 2016, 138, 10869-10878.	6.6	89
58	Fast Fractionation of Technical Lignins by Organic Cosolvents. ACS Sustainable Chemistry and Engineering, 2018, 6, 6064-6072.	3.2	84
59	Comparison of enzymatic reactivity of corn stover solids prepared by dilute acid, AFEXâ„¢, and ionic liquid pretreatments. Biotechnology for Biofuels, 2014, 7, 71.	6.2	81
60	Characterization of fractional cuts of co-solvent enhanced lignocellulosic fractionation lignin isolated by sequential precipitation. Bioresource Technology, 2019, 272, 202-208.	4.8	80
61	Biological lignocellulose solubilization: comparative evaluation of biocatalysts and enhancement via cotreatment. Biotechnology for Biofuels, 2016, 9, 8.	6.2	78
62	The Effect of Flow Rate of Very Dilute Sulfuric Acid on Xylan, Lignin, and Total Mass Removal from Corn Stover. Industrial & Engineering Chemistry Research, 2004, 43, 2781-2788.	1.8	74
63	Strong cellulase inhibition by Mannan polysaccharides in cellulose conversion to sugars. Biotechnology and Bioengineering, 2014, 111, 1341-1353.	1.7	74
64	Twenty Years of Trials, Tribulations, and Research Progress in Bioethanol Technology: Selected Key Events Along the Way. Applied Biochemistry and Biotechnology, 2001, 91-93, 5-22.	1.4	73
65	Unifying Mechanistic Analysis of Factors Controlling Selectivity in Fructose Dehydration to 5-Hydroxymethylfurfural by Homogeneous Acid Catalysts in Aprotic Solvents. ACS Catalysis, 2018, 8, 5591-5600.	5.5	73
66	A Multifunctional Cosolvent Pair Reveals Molecular Principles of Biomass Deconstruction. Journal of the American Chemical Society, 2019, 141, 12545-12557.	6.6	73
67	Deactivation of Cellulase at the Air-Liquid Interface Is the Main Cause of Incomplete Cellulose Conversion at Low Enzyme Loadings. Scientific Reports, 2018, 8, 1350.	1.6	67
68	Sugar yields from dilute sulfuric acid and sulfur dioxide pretreatments and subsequent enzymatic hydrolysis of switchgrass. Bioresource Technology, 2011, 102, 8930-8938.	4.8	65
69	Lignocellulose fermentation and residual solids characterization for senescent switchgrass fermentation by <i>Clostridium thermocellum</i> in the presence and absence of continuous <i>in situ</i> ball-milling. Energy and Environmental Science, 2017, 10, 1252-1261.	15.6	65
70	The effect of bovine serum albumin on batch and continuous enzymatic cellulose hydrolysis mixed by stirring or shaking. Bioresource Technology, 2011, 102, 6295-6298.	4.8	56
71	Chemical composition and characterization of cellulose for Agave as a fast-growing, drought-tolerant biofuels feedstock. RSC Advances, 2012, 2, 4951.	1.7	56
72	Enhanced yields of furfural and other products by simultaneous solvent extraction during thermochemical treatment of cellulosic biomass. RSC Advances, 2013, 3, 9809.	1.7	53

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73	Flowthrough pretreatment with very dilute acid provides insights into high lignin contribution to biomass recalcitrance. Biotechnology for Biofuels, 2016, 9, 245.	6.2	52
74	Celluloseâ€"hemicellulose interactions at elevated temperatures increase cellulose recalcitrance to biological conversion. Green Chemistry, 2018, 20, 921-934.	4.6	49
75	Comparison of changes in cellulose ultrastructure during different pretreatments of poplar. Cellulose, 2014, 21, 2419-2431.	2.4	47
76	Multiple levers for overcoming the recalcitrance of lignocellulosic biomass. Biotechnology for Biofuels, 2019, 12, 15.	6.2	47
77	Adding tetrahydrofuran to dilute acid pretreatment provides new insights into substrate changes that greatly enhance biomass deconstruction by Clostridium thermocellum and fungal enzymes. Biotechnology for Biofuels, 2017, 10, 252.	6.2	43
78	Agave proves to be a low recalcitrant lignocellulosic feedstock for biofuels production on semi-arid lands. Biotechnology for Biofuels, 2014, 7, 50.	6.2	42
79	Xylose yields and relationship to combined severity for dilute acid post-hydrolysis of xylooligomers from hydrothermal pretreatment of corn stover. Green Chemistry, 2015, 17, 394-403.	4.6	41
80	Biomass augmentation through thermochemical pretreatments greatly enhances digestion of switchgrass by Clostridium thermocellum. Biotechnology for Biofuels, 2018, 11, 219.	6.2	40
81	Effects of dilute acid and flowthrough pretreatments and BSA supplementation on enzymatic deconstruction of poplar by cellulase and xylanase. Carbohydrate Polymers, 2017, 157, 1940-1948.	5.1	36
82	Robustness of two-step acid hydrolysis procedure for composition analysis of poplar. Bioresource Technology, 2016, 216, 1077-1082.	4.8	34
83	Solubilities of Oligomer Mixtures Produced by the Hydrolysis of Xylans and Corn Stover in Water at 180 Â°C. Industrial & Engineering Chemistry Research, 2007, 46, 2383-2391.	1.8	30
84	Natural genetic variability reduces recalcitrance in poplar. Biotechnology for Biofuels, 2016, 9, 106.	6.2	29
85	Understanding Multiscale Structural Changes During Dilute Acid Pretreatment of Switchgrass and Poplar. ACS Sustainable Chemistry and Engineering, 2017, 5, 426-435.	3.2	29
86	Impacts of cellulase deactivation at the moving airâ€"liquid interface on cellulose conversions at low enzyme loadings. Biotechnology for Biofuels, 2019, 12, 96.	6.2	28
87	Unconventional Relationships for Hemicellulose Hydrolysis and Subsequent Cellulose Digestion. ACS Symposium Series, 2004, , 100-125.	0.5	27
88	Loss of function of folylpolyglutamate synthetase 1 reduces lignin content and improves cell wall digestibility in Arabidopsis. Biotechnology for Biofuels, 2015, 8, 224.	6.2	27
89	Performance of three delignifying pretreatments on hardwoods: hydrolysis yields, comprehensive mass balances, and lignin properties. Biotechnology for Biofuels, 2019, 12, 213.	6.2	27
90	The effect of switchgrass plant cell wall properties on its deconstruction by thermochemical pretreatments coupled with fungal enzymatic hydrolysis or<i>Clostridium thermocellum</i>consolidated bioprocessing. Green Chemistry, 2020, 22, 7924-7945.	4.6	25

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91	How chip size impacts steam pretreatment effectiveness for biological conversion of poplar wood into fermentable sugars. Biotechnology for Biofuels, 2015, 8, 209.	6.2	23
92	Investigation of enzyme formulation on pretreated switchgrass. Bioresource Technology, 2011, 102, 11072-11079.	4.8	21
93	THF co-solvent pretreatment prevents lignin redeposition from interfering with enzymes yielding prolonged cellulase activity. Biotechnology for Biofuels, 2021, 14, 63.	6.2	21
94	Co-hydrolysis of hydrothermal and dilute acid pretreated populus slurries to support development of a high-throughput pretreatment system. Biotechnology for Biofuels, 2011, 4, 19.	6.2	20
95	Comparative evaluation of Populus variants total sugar release and structural features following pretreatment and digestion by two distinct biological systems. Biotechnology for Biofuels, 2017, 10, 292.	6.2	19
96	Sugar yield and composition of tubers from Jerusalem Artichoke (<i>Helianthus tuberosus</i>) irrigated with saline waters. Biotechnology and Bioengineering, 2018, 115, 1475-1484.	1.7	18
97	Single-step catalytic conversion of furfural to 2-pentanol over bimetallic Coâ€“Cu catalysts. Reaction Chemistry and Engineering, 2019, 4, 261-267.	1.9	17
98	Xylan hydrolysis in Populus trichocarpaÃ—P. deltoides and model substrates during hydrothermal pretreatment. Bioresource Technology, 2015, 179, 202-210.	4.8	16
99	Topochemical Understanding of Lignin Distribution During Hydrothermal Flowthrough Pretreatment. ChemistrySelect, 2018, 3, 9348-9352.	0.7	16
100	Heat Transfer Considerations in Design of a Batch Tube Reactor for Biomass Hydrolysis. Applied Biochemistry and Biotechnology, 2001, 91-93, 377-386.	1.4	15
101	Cosolvent enhanced lignocellulosic fractionation tailoring lignin chemistry and enhancing lignin bioconversion. Bioresource Technology, 2022, 347, 126367.	4.8	14
102	Polyurethanes Based on Unmodified and Refined Technical Lignins: Correlation between Molecular Structure and Material Properties. Biomacromolecules, 2021, 22, 2129-2136.	2.6	11
103	CELF significantly reduces milling requirements and improves soaking effectiveness for maximum sugar recovery of Alamo switchgrass over dilute sulfuric acid pretreatment. Biotechnology for Biofuels, 2019, 12, 177.	6.2	10
104	Cellulose hydrolysis by<i>Clostridium thermocellum</i>is agnostic to substrate structural properties in contrast to fungal cellulases. Green Chemistry, 2019, 21, 2810-2822.	4.6	10
105	Undefined cellulase formulations hinder scientific reproducibility. Biotechnology for Biofuels, 2017, 10, 283.	6.2	7
106	What could be possible with mature biofuels technologies?. Biofuels, Bioproducts and Biorefining, 2009, 3, 105-107.	1.9	6
107	Application of a slurry feeder to 1 and 3 stage continuous simultaneous saccharification and fermentation of dilute acid pretreated corn stover. Bioresource Technology, 2014, 170, 470-476.	4.8	6
108	Recalcitrance and structural analysis by water-only flowthrough pretreatment of 13C enriched corn stover stem. Bioresource Technology, 2015, 197, 128-136.	4.8	6

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109	Relationship between ZSM-5 pore modifications and gallium proximity and liquid hydrocarbon number distribution from ethanol oligomerization. Catalysis Science and Technology, 2022, 12, 4903-4916.	2.1	5
110	Elucidation of native California Agave americana and Agave deserti biofuel potential: Compositional analysis. PLoS ONE, 2021, 16, e0252201.	1.1	3
111	Research and Development Needs for a Fully Sustainable Biocommodity Industry. ACS Symposium Series, 2002, , 31-46.	0.5	2
112	Biofuels from cellulosic biomass via aqueous processing. , 0, , 336-348.		2
113	Novel in Situ Device for Measuring Solubilities. Industrial & Engineering Chemistry Research, 2004, 43, 6587-6591.	1.8	0