Charles E Wyman

List of Publications by Year in Descending Order

132 papers	22,729 citations	61 h-index	140 g-index
140 ext. papers	24,713 ext. citations	9.8 avg, IF	7.13 L-index

#	Paper	IF	Citations
132	Cosolvent enhanced lignocellulosic fractionation tailoring lignin chemistry and enhancing lignin bioconversion. *Bioresource Technology*, **2021**, 126367	11	2
131	THF co-solvent pretreatment prevents lignin redeposition from interfering with enzymes yielding prolonged cellulase activity. *Biotechnology for Biofuels*, **2021**, 14, 63	7.8	10
130	Polyurethanes Based on Unmodified and Refined Technical Lignins: Correlation between Molecular Structure and Material Properties. *Biomacromolecules*, **2021**, 22, 2129-2136	6.9	4
129	Elucidation of native California Agave americana and Agave deserti biofuel potential: Compositional analysis. *PLoS ONE*, **2021**, 16, e0252201	3.7	2
128	The effect of switchgrass plant cell wall properties on its deconstruction by thermochemical pretreatments coupled with fungal enzymatic hydrolysis or Clostridium thermocellum consolidated bioprocessing. *Green Chemistry*, **2020**, 22, 7924-7945	10	7
127	Performance of three delignifying pretreatments on hardwoods: hydrolysis yields, comprehensive mass balances, and lignin properties. *Biotechnology for Biofuels*, **2019**, 12, 213	7.8	17
126	Single-step catalytic conversion of furfural to 2-pentanol over bimetallic Co□u catalysts. *Reaction Chemistry and Engineering*, **2019**, 4, 261-267	4.9	13
125	Multiple levers for overcoming the recalcitrance of lignocellulosic biomass. *Biotechnology for Biofuels*, **2019**, 12, 15	7.8	36
124	Impacts of cellulase deactivation at the moving air-liquid interface on cellulose conversions at low enzyme loadings. *Biotechnology for Biofuels*, **2019**, 12, 96	7.8	16
123	Cellulose hydrolysis by Clostridium thermocellum is agnostic to substrate structural properties in contrast to fungal cellulases. *Green Chemistry*, **2019**, 21, 2810-2822	10	8
122	A Multifunctional Cosolvent Pair Reveals Molecular Principles of Biomass Deconstruction. *Journal of the American Chemical Society*, **2019**, 141, 12545-12557	16.4	41
121	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	7.8	9
120	Characterization of fractional cuts of co-solvent enhanced lignocellulosic fractionation lignin isolated by sequential precipitation. *Bioresource Technology*, **2019**, 272, 202-208	11	52
119	Sugar yield and composition of tubers from Jerusalem Artichoke (Helianthus tuberosus) irrigated with saline waters. *Biotechnology and Bioengineering*, **2018**, 115, 1475-1484	4.9	15
118	Cellulose□emicellulose interactions at elevated temperatures increase cellulose recalcitrance to biological conversion. *Green Chemistry*, **2018**, 20, 921-934	10	33
117	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	4.9	48
116	Fast Fractionation of Technical Lignins by Organic Cosolvents. *ACS Sustainable Chemistry and Engineering*, **2018**, 6, 6064-6072	8.3	57

115	Strengths, challenges, and opportunities for hydrothermal pretreatment in lignocellulosic biorefineries. *Biofuels, Bioproducts and Biorefining*, **2018**, 12, 125-138	5.3	76
114	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	13.1	46
113	Biomass augmentation through thermochemical pretreatments greatly enhances digestion of switchgrass by. *Biotechnology for Biofuels*, **2018**, 11, 219	7.8	25
112	Topochemical Understanding of Lignin Distribution During Hydrothermal Flowthrough Pretreatment. *ChemistrySelect*, **2018**, 3, 9348-9352	1.8	10
111	Chemical Transformations of Poplar Lignin during Cosolvent Enhanced Lignocellulosic Fractionation Process. *ACS Sustainable Chemistry and Engineering*, **2018**, 6, 8711-8718	8.3	65
110	Lignocellulose fermentation and residual solids characterization for senescent switchgrass fermentation by Clostridium thermocellum in the presence and absence of continuous in situ ball-milling. *Energy and Environmental Science*, **2017**, 10, 1252-1261	35.4	48
109	Support Induced Control of Surface Composition in CuNi/TiO2 Catalysts Enables High Yield Co-Conversion of HMF and Furfural to Methylated Furans. *ACS Catalysis*, **2017**, 7, 4070-4082	13.1	108
108	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	10.3	29
107	Understanding Multiscale Structural Changes During Dilute Acid Pretreatment of Switchgrass and Poplar. *ACS Sustainable Chemistry and Engineering*, **2017**, 5, 426-435	8.3	23
106	Cellulosic ethanol: status and innovation. *Current Opinion in Biotechnology*, **2017**, 45, 202-211	11.4	236
105	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	11.5	97
104	Adding tetrahydrofuran to dilute acid pretreatment provides new insights into substrate changes that greatly enhance biomass deconstruction by and fungal enzymes. *Biotechnology for Biofuels*, **2017**, 10, 252	7.8	30
103	Comparative evaluation of variants total sugar release and structural features following pretreatment and digestion by two distinct biological systems. *Biotechnology for Biofuels*, **2017**, 10, 292	7.8	17
102	Cosolvent pretreatment in cellulosic biofuel production: effect of tetrahydrofuran-water on lignin structure and dynamics. *Green Chemistry*, **2016**, 18, 1268-1277	10	87
101	Local Phase Separation of Co-solvents Enhances Pretreatment of Biomass for Bioenergy Applications. *Journal of the American Chemical Society*, **2016**, 138, 10869-78	16.4	65
100	Natural genetic variability reduces recalcitrance in poplar. *Biotechnology for Biofuels*, **2016**, 9, 106	7.8	28
99	Biological lignocellulose solubilization: comparative evaluation of biocatalysts and enhancement via cotreatment. *Biotechnology for Biofuels*, **2016**, 9, 8	7.8	63
98	Next-generation ammonia pretreatment enhances cellulosic biofuel production. *Energy and Environmental Science*, **2016**, 9, 1215-1223	35.4	141

97	Flowthrough pretreatment with very dilute acid provides insights into high lignin contribution to biomass recalcitrance. *Biotechnology for Biofuels*, **2016**, 9, 245	7.8	43
96	Robustness of two-step acid hydrolysis procedure for composition analysis of poplar. *Bioresource Technology*, **2016**, 216, 1077-82	11	21
95	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	10	34
94	Xylan hydrolysis in Populus trichocarpa P. deltoides and model substrates during hydrothermal pretreatment. *Bioresource Technology*, **2015**, 179, 202-210	11	15
93	Loss of function of folylpolyglutamate synthetase 1 reduces lignin content and improves cell wall digestibility in Arabidopsis. *Biotechnology for Biofuels*, **2015**, 8, 224	7.8	20
92	Recalcitrance and structural analysis by water-only flowthrough pretreatment of (13)C enriched corn stover stem. *Bioresource Technology*, **2015**, 197, 128-36	11	6
91	How chip size impacts steam pretreatment effectiveness for biological conversion of poplar wood into fermentable sugars. *Biotechnology for Biofuels*, **2015**, 8, 209	7.8	19
90	Co-solvent pretreatment reduces costly enzyme requirements for high sugar and ethanol yields from lignocellulosic biomass. *ChemSusChem*, **2015**, 8, 1716-25	8.3	133
89	Investigation of lignin deposition on cellulose during hydrothermal pretreatment, its effect on cellulose hydrolysis, and underlying mechanisms. *Biotechnology and Bioengineering*, **2014**, 111, 485-92	4.9	185
88	Lignin valorization: improving lignin processing in the biorefinery. *Science*, **2014**, 344, 1246843	33.3	2274
87	Strong cellulase inhibition by Mannan polysaccharides in cellulose conversion to sugars. *Biotechnology and Bioengineering*, **2014**, 111, 1341-53	4.9	63
86	Production of renewable jet fuel range alkanes and commodity chemicals from integrated catalytic processing of biomass. *Energy and Environmental Science*, **2014**, 7, 1500-1523	35.4	295
85	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	10	136
84	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	11	4
83	Agave proves to be a low recalcitrant lignocellulosic feedstock for biofuels production on semi-arid lands. *Biotechnology for Biofuels*, **2014**, 7, 50	7.8	34
82	Comparison of enzymatic reactivity of corn stover solids prepared by dilute acid, AFEX and ionic liquid pretreatments. *Biotechnology for Biofuels*, **2014**, 7, 71	7.8	70
81	A comparative study of ethanol production using dilute acid, ionic liquid and AFEX pretreated corn stover. *Biotechnology for Biofuels*, **2014**, 7, 72	7.8	166
80	Comparison of changes in cellulose ultrastructure during different pretreatments of poplar. *Cellulose*, **2014**, 21, 2419-2431	5.5	37

79	Effect of lignin content on changes occurring in poplar cellulose ultrastructure during dilute acid pretreatment. *Biotechnology for Biofuels*, **2014**, 7, 150	7.8	94
78	Integrated furfural production as a renewable fuel and chemical platform from lignocellulosic biomass. *Journal of Chemical Technology and Biotechnology*, **2014**, 89, 2-10	3.5	300
77	THF co-solvent enhances hydrocarbon fuel precursor yields from lignocellulosic biomass. *Green Chemistry*, **2013**, 15, 3140	10	182
76	The fate of lignin during hydrothermal pretreatment. *Biotechnology for Biofuels*, **2013**, 6, 110	7.8	152
75	Investigating plant cell wall components that affect biomass recalcitrance in poplar and switchgrass. *Energy and Environmental Science*, **2013**, 6, 898	35.4	194
74	Carbohydrate derived-pseudo-lignin can retard cellulose biological conversion. *Biotechnology and Bioengineering*, **2013**, 110, 737-53	4.9	152
73	Enhanced yields of furfural and other products by simultaneous solvent extraction during thermochemical treatment of cellulosic biomass. *RSC Advances*, **2013**, 3, 9809	3.7	50
72	Plant Cell Walls: Basics of Structure, Chemistry, Accessibility and the Influence on Conversion **2013**, 23-38		45
71	Catalytic Strategies for Converting Lignocellulosic Carbohydrates to Fuels and Chemicals **2013**, 61-102		6
70	Fundamentals of Aqueous Pretreatment of Biomass **2013**, 129-143		13
69	Primer on Ammonia Fiber Expansion Pretreatment **2013**, 169-200		19
68	Ionic Liquid Pretreatment: Mechanism, Performance, and Challenges **2013**, 223-238		11
67	Effects of Enzyme Formulation and Loadings on Conversion of Biomass Pretreated by Leading Technologies **2013**, 261-279		2
66	Economics of Pretreatment for Biological Processing **2013**, 311-333		3
65	High-Throughput NIR Analysis of Biomass Pretreatment Streams **2013**, 355-368		1
64	Xylooligosaccharides Production, Quantification, and Characterization in Context of Lignocellulosic Biomass Pretreatment **2013**, 391-415		25
63	Laboratory Pretreatment Systems to Understand Biomass Deconstruction **2013**, 489-521		8
62	Experimental Enzymatic Hydrolysis Systems **2013**, 451-469		

61	Cellulosic Biofuels: Importance, Recalcitrance, and Pretreatment **2013**, 17-21		4
60	Biological Conversion of Plants to Fuels and Chemicals and the Effects of Inhibitors **2013**, 39-60		11
59	Fundamentals of Biomass Pretreatment at Low pH **2013**, 103-128		18
58	High-Throughput Pretreatment and Hydrolysis Systems for Screening Biomass Species in Aqueous Pretreatment of Plant Biomass **2013**, 471-488		1
57	Experimental Pretreatment Systems from Laboratory to Pilot Scale **2013**, 417-450		2
56	Plant Biomass Characterization: Application of Solution- and Solid-State NMR Spectroscopy **2013**, 369-390		19
55	Progress in the Summative Analysis of Biomass Feedstocks for Biofuels Production **2013**, 335-354		2
54	Physical and Chemical Features of Pretreated Biomass that Influence Macro-/Micro-Accessibility and Biological Processing **2013**, 281-310		30
53	Fundamentals of Biomass Pretreatment at High pH **2013**, 145-167		11
52	Fundamentals of Biomass Pretreatment by Fractionation **2013**, 201-222		38
51	Comparative Performance of Leading Pretreatment Technologies for Biological Conversion of Corn Stover, Poplar Wood, and Switchgrass to Sugars **2013**, 239-259		27
50	Comparison of laboratory delignification methods, their selectivity, and impacts on physiochemical characteristics of cellulosic biomass. *Bioresource Technology*, **2013**, 130, 372-81	11	144
49	Hydrochloric acid-catalyzed levulinic acid formation from cellulose: data and kinetic model to maximize yields. *AICHE Journal*, **2012**, 58, 236-246	3.6	129
48	Chemical transformations of Populus trichocarpa during dilute acid pretreatment. *RSC Advances*, **2012**, 2, 10925	3.7	126
47	Chemical composition and characterization of cellulose for Agave as a fast-growing, drought-tolerant biofuels feedstock. *RSC Advances*, **2012**, 2, 4951	3.7	48
46	4-O-methylation of glucuronic acid in Arabidopsis 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, 14253-8	11.5	123
45	Enzymatic hydrolysis of cellulosic biomass. *Biofuels*, **2011**, 2, 421-449	2	359
44	Application of monoclonal antibodies to investigate plant cell wall deconstruction for biofuels production. *Energy and Environmental Science*, **2011**, 4, 4332	35.4	97

43	Renewable gasoline from aqueous phase hydrodeoxygenation of aqueous sugar solutions prepared by hydrolysis of maple wood. *Green Chemistry*, **2011**, 13, 91-101	10	105
42	Investigation of enzyme formulation on pretreated switchgrass. *Bioresource Technology*, **2011**, 102, 11072-9	11	21
41	Comparative study on enzymatic digestibility of switchgrass varieties and harvests processed by leading pretreatment technologies. *Bioresource Technology*, **2011**, 102, 11089-96	11	82
40	Comparative data on effects of leading pretreatments and enzyme loadings and formulations on sugar yields from different switchgrass sources. *Bioresource Technology*, **2011**, 102, 11052-62	11	114
39	Sugar yields from dilute sulfuric acid and sulfur dioxide pretreatments and subsequent enzymatic hydrolysis of switchgrass. *Bioresource Technology*, **2011**, 102, 8930-8	11	61
38	Supplementation with xylanase and β-xylosidase to reduce xylo-oligomer and xylan inhibition of enzymatic hydrolysis of cellulose and pretreated corn stover. *Biotechnology for Biofuels*, **2011**, 4, 18	7.8	157
37	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	7.8	17
36	The effect of bovine serum albumin on batch and continuous enzymatic cellulose hydrolysis mixed by stirring or shaking. *Bioresource Technology*, **2011**, 102, 6295-8	11	43
35	Lignin content in natural Populus variants affects sugar release. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 6300-5	11.5	443
34	Depolymerization of lignocellulosic biomass to fuel precursors: maximizing carbon efficiency by combining hydrolysis with pyrolysis. *Energy and Environmental Science*, **2010**, 3, 358	35.4	142
33	Xylooligomers are strong inhibitors of cellulose hydrolysis by enzymes. *Bioresource Technology*, **2010**, 101, 9624-30	11	408
32	Cellulase adsorption and relationship to features of corn stover solids produced by leading pretreatments. *Biotechnology and Bioengineering*, **2009**, 103, 252-67	4.9	173
31	Effects of cellulase and xylanase enzymes on the deconstruction of solids from pretreatment of poplar by leading technologies. *Biotechnology Progress*, **2009**, 25, 302-14	2.8	222
30	Comparative sugar recovery and fermentation data following pretreatment of poplar wood by leading technologies. *Biotechnology Progress*, **2009**, 25, 333-9	2.8	250
29	Access of cellulase to cellulose and lignin for poplar solids produced by leading pretreatment technologies. *Biotechnology Progress*, **2009**, 25, 807-19	2.8	156
28	Summary of findings from the Biomass Refining Consortium for Applied Fundamentals and Innovation (CAFI): corn stover pretreatment. *Cellulose*, **2009**, 16, 649-659	5.5	86
27	Physical and chemical characterizations of corn stover and poplar solids resulting from leading pretreatment technologies. *Bioresource Technology*, **2009**, 100, 3948-62	11	680
26	Effect of xylanase supplementation of cellulase on digestion of corn stover solids prepared by leading pretreatment technologies. *Bioresource Technology*, **2009**, 100, 4203-13	11	234

25	How biotech can transform biofuels. *Nature Biotechnology*, **2008**, 26, 169-72	44.5	859
24	Pretreatment: the key to unlocking low-cost cellulosic ethanol. *Biofuels, Bioproducts and Biorefining*, **2008**, 2, 26-40	5.3	1087
23	An improved method to directly estimate cellulase adsorption on biomass solids. *Enzyme and Microbial Technology*, **2008**, 42, 426-433	3.8	88
22	Solubilities of Oligomer Mixtures Produced by the Hydrolysis of Xylans and Corn Stover in Water at 180 ℃. *Industrial & Engineering Chemistry Research*, **2007**, 46, 2383-2391	3.9	30
21	What is (and is not) vital to advancing cellulosic ethanol. *Trends in Biotechnology*, **2007**, 25, 153-7	15.1	489
20	BSA treatment to enhance enzymatic hydrolysis of cellulose in lignin containing substrates. *Biotechnology and Bioengineering*, **2006**, 94, 611-7	4.9	403
19	Features of promising technologies for pretreatment of lignocellulosic biomass. *Bioresource Technology*, **2005**, 96, 673-86	11	4441
18	Coordinated development of leading biomass pretreatment technologies. *Bioresource Technology*, **2005**, 96, 1959-66	11	1076
17	Combined sugar yields for dilute sulfuric acid pretreatment of corn stover followed by enzymatic hydrolysis of the remaining solids. *Bioresource Technology*, **2005**, 96, 1967-77	11	588
16	Comparative sugar recovery data from laboratory scale application of leading pretreatment technologies to corn stover. *Bioresource Technology*, **2005**, 96, 2026-32	11	426
15	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	3.9	64
14	Novel in Situ Device for Measuring Solubilities. *Industrial & Engineering Chemistry Research*, **2004**, 43, 6587-6591	3.9	
13	Unconventional Relationships for Hemicellulose Hydrolysis and Subsequent Cellulose Digestion. *ACS Symposium Series*, **2004**, 100-125	0.4	25
12	Potential synergies and challenges in refining cellulosic biomass to fuels, chemicals, and power. *Biotechnology Progress*, **2003**, 19, 254-62	2.8	152
11	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	3.9	243
10	Research and Development Needs for a Fully Sustainable Biocommodity Industry. *ACS Symposium Series*, **2002**, 31-46	0.4	2
9	Xylose Monomer and Oligomer Yields for Uncatalyzed Hydrolysis of Sugarcane Bagasse Hemicellulose at Varying Solids Concentration. *Industrial & Engineering Chemistry Research*, **2002**, 41, 1454-1461	3.9	144
8	Heat transfer considerations in design of a batch tube reactor for biomass hydrolysis. *Applied Biochemistry and Biotechnology*, **2001**, 91-93, 377-86	3.2	14

7	Twenty years of trials, tribulations, and research progress in bioethanol technology: selected key events along the way. *Applied Biochemistry and Biotechnology*, **2001**, 91-93, 5-21	3.2	69
6	Cellulose and hemicellulose hydrolysis models for application to current and novel pretreatment processes. *Applied Biochemistry and Biotechnology*, **2000**, 84-86, 81-96	3.2	187
5	Biocommodity Engineering. *Biotechnology Progress*, **1999**, 15, 777-793	2.8	591
4	BIOMASSETHANOL: Technical Progress, Opportunities, and Commercial Challenges. *Annual Review of Environment and Resources*, **1999**, 24, 189-226		404
3	Ethanol from lignocellulosic biomass: Technology, economics, and opportunities. *Bioresource Technology*, **1994**, 50, 3-15	11	364
2	Biofuels from cellulosic biomass via aqueous processing336-348		
1	Toward low-cost biological and hybrid biological/catalytic conversion of cellulosic biomass to fuels. *Energy and Environmental Science*,	35.4	7