Marcus B Foston

List of Publications by Year
in descending order

67 papers	3,968 citations	136950 32 h-index	118850 62 g-index
69 all docs	69 docs citations	69 times ranked	5290 citing authors

#	Article	IF	Citations
1	Genetic manipulation of lignin reduces recalcitrance and improves ethanol production from switchgrass. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 3803-3808.	7.1	585
2	Improving the mechanical and thermal properties of gelatin hydrogels cross-linked by cellulose nanowhiskers. Carbohydrate Polymers, 2013, 91, 638-645.	10.2	277
3	Common processes drive the thermochemical pretreatment of lignocellulosic biomass. Green Chemistry, 2014, 16, 63-68.	9.0	198
4	The fate of lignin during hydrothermal pretreatment. Biotechnology for Biofuels, 2013, 6, 110.	6.2	191
5	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, 14253-14258.	7.1	164
6	Breakdown of Cell Wall Nanostructure in Dilute Acid Pretreated Biomass. Biomacromolecules, 2010, 11, 2329-2335.	5.4	143
7	Advances in solid-state NMR of cellulose. Current Opinion in Biotechnology, 2014, 27, 176-184.	6.6	138
8	Changes in lignocellulosic supramolecular and ultrastructure during dilute acid pretreatment of Populus and switchgrass. Biomass and Bioenergy, 2010, 34, 1885-1895.	5.7	132
9	Effect of lignin content on changes occurring in poplar cellulose ultrastructure during dilute acid pretreatment. Biotechnology for Biofuels, 2014, 7, 150.	6.2	113
10	Comparative transcriptomics elucidates adaptive phenol tolerance and utilization in lipid-accumulatingRhodococcus opacusPD630. Nucleic Acids Research, 2016, 44, 2240-2254.	14.5	105
11	NMR a critical tool to study the production of carbon fiber from lignin. Carbon, 2013, 52, 65-73.	10.3	103
12	HSQC (heteronuclear single quantum coherence) 13Câ€“1H correlation spectra of whole biomass in perdeuterated pyridinium chlorideâ€“DMSO system: An effective tool for evaluating pretreatment. Fuel, 2011, 90, 2836-2842.	6.4	91
13	Biomass Characterization: Recent Progress in Understanding Biomass Recalcitrance. Industrial Biotechnology, 2012, 8, 191-208.	0.8	90
14	Facet-Dependent Enhancement in the Activity of Bismuth Vanadate Microcrystals for the Photocatalytic Conversion of Methane to Methanol. ACS Applied Nano Materials, 2018, 1, 6683-6691.	5.0	79
15	Carbohydrate and lignin are simultaneously solubilized from unpretreated switchgrass by microbial action at high temperature. Energy and Environmental Science, 2013, 6, 2186.	30.8	75
16	Isolation and characterization of new lignin streams derived from extractive-ammonia (EA) pretreatment. Green Chemistry, 2016, 18, 4205-4215.	9.0	68
17	Changes in the Structure of the Cellulose Fiber Wall during Dilute Acid Pretreatment in Populus Studied by ¹H and ²H NMR. Energy & Fuels, 2010, 24, 5677-5685.	5.1	66
18	Poly(methyl vinyl ether-co-maleic acid)â^'Polyethylene Glycol Nanocomposites Cross-Linked In Situ with Cellulose Nanowhiskers. Biomacromolecules, 2010, 11, 2660-2666.	5.4	66

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19	Solid-state NMR characterization of switchgrass cellulose after dilute acid pretreatment. Biofuels, 2010, 1, 85-90.	2.4	65
20	Cellulose Isolation Methodology for NMR Analysis of Cellulose Ultrastructure. Materials, 2011, 4, 1985-2002.	2.9	65
21	Chemical, ultrastructural and supramolecular analysis of tension wood in Populus tremula x alba as a model substrate for reduced recalcitrance. Energy and Environmental Science, 2011, 4, 4962.	30.8	61
22	Surface Characterization of Dilute Acid Pretreated Populus deltoides by ToF-SIMS. Energy & Fuels, 2010, 24, 1347-1357.	5.1	60
23	Chemical composition and characterization of cellulose for Agave as a fast-growing, drought-tolerant biofuels feedstock. RSC Advances, 2012, 2, 4951.	3.6	56
24	Enhancing Aromatic Production from Reductive Lignin Disassembly: in Situ O-Methylation of Phenolic Intermediates. ACS Sustainable Chemistry and Engineering, 2016, 4, 6877-6886.	6.7	52
25	A review of whole cell wall NMR by the direct-dissolution of biomass. Green Chemistry, 2016, 18, 608-621.	9.0	50
26	Multi-omic elucidation of aromatic catabolism in adaptively evolved Rhodococcus opacus. Metabolic Engineering, 2018, 49, 69-83.	7.0	50
27	Comparison of changes in cellulose ultrastructure during different pretreatments of poplar. Cellulose, 2014, 21, 2419-2431.	4.9	47
28	The effect of deuteration on the structure of bacterial cellulose. Carbohydrate Research, 2013, 374, 82-88.	2.3	45
29	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
30	Reaction engineering implications of cellulose crystallinity and water-promoted recrystallization. Green Chemistry, 2019, 21, 5541-5555.	9.0	40
31	A concerted systems biology analysis of phenol metabolism in Rhodococcus opacus PD630. Metabolic Engineering, 2019, 55, 120-130.	7.0	37
32	Development of Rhodococcus opacus as a chassis for lignin valorization and bioproduction of high-value compounds. Biotechnology for Biofuels, 2019, 12, 192.	6.2	35
33	Variations in Cellulosic Ultrastructure of Poplar. Bioenergy Research, 2009, 2, 193-197.	3.9	33
34	Compositional Characterization and Pyrolysis of Loblolly Pine and Douglas-fir Bark. Bioenergy Research, 2013, 6, 24-34.	3.9	32
35	Solid-State Selective ¹³C Excitation and Spin Diffusion NMR To Resolve Spatial Dimensions in Plant Cell Walls. Journal of Agricultural and Food Chemistry, 2012, 60, 1419-1427.	5.2	30
36	SANS study of cellulose extracted from switchgrass. Acta Crystallographica Section D: Biological Crystallography, 2010, 66, 1189-1193.	2.5	29

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37	Understanding Multiscale Structural Changes During Dilute Acid Pretreatment of Switchgrass and Poplar. ACS Sustainable Chemistry and Engineering, 2017, 5, 426-435.	6.7	29
38	Cross-Polarization/Magic Angle Spinning (CP/MAS) ¹³C Nuclear Magnetic Resonance (NMR) Analysis of Chars from Alkaline-Treated Pyrolyzed Softwood. Energy & Fuels, 2009, 23, 498-501.	5.1	25
39	Evaluating lignin valorization via pyrolysis and vapor-phase hydrodeoxygenation for production of aromatics and alkenes. Green Chemistry, 2020, 22, 2513-2525.	9.0	25
40	Biomass Characterization of Morphological Portions of Alamo Switchgrass. Journal of Agricultural and Food Chemistry, 2011, 59, 7765-7772.	5.2	24
41	Investigation of glycosaminoglycan mimetic scaffolds for neurite growth. Acta Biomaterialia, 2019, 90, 169-178.	8.3	24
42	Rapid Quantitative Analytical Tool for Characterizing the Preparation of Biodiesel. Journal of Physical Chemistry A, 2010, 114, 3883-3887.	2.5	23
43	Enhanced thermal and combustion resistance of cotton linked to natural inorganic salt components. Cellulose, 2014, 21, 791-802.	4.9	23
44	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
45	Lipid metabolism of phenol-tolerant Rhodococcus opacus strains for lignin bioconversion. Biotechnology for Biofuels, 2018, 11, 339.	6.2	23
46	13C cell wall enrichment and ionic liquid NMR analysis: progress towards a high-throughput detailed chemical analysis of the whole plant cell wall. Analyst, The, 2012, 137, 3904.	3.5	22
47	Isolation of lignin from Ammonia Fiber Expansion (AFEX) pretreated biorefinery waste. Biomass and Bioenergy, 2018, 119, 446-455.	5.7	21
48	Peroxidative Oxidation of Lignin and a Lignin Model Compound by a Manganese SALEN Derivative. ACS Sustainable Chemistry and Engineering, 2016, 4, 3212-3219.	6.7	20
49	Deuterium incorporation in biomass cell wall components by NMR analysis. Analyst, The, 2012, 137, 1090.	3.5	19
50	Kinetics of Secondary Reactions Affecting the Organosolv Lignin Structure. ChemSusChem, 2020, 13, 4557-4566.	6.8	18
51	Neutron Technologies for Bioenergy Research. Industrial Biotechnology, 2012, 8, 209-216.	0.8	17
52	Topochemical Understanding of Lignin Distribution During Hydrothermal Flowthrough Pretreatment. ChemistrySelect, 2018, 3, 9348-9352.	1.5	16
53	Production of deuterated switchgrass by hydroponic cultivation. Planta, 2015, 242, 215-222.	3.2	15
54	Surface Modification by Electrostatic Selfâ€Assembly Followed by Covalent Fixation. Angewandte Chemie - International Edition, 2012, 51, 1849-1852.	13.8	10

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55	Application of pan-sharpening algorithm for correlative multimodal imaging using AFM-IR. Npj Computational Materials, 2019, 5, .	8.7	9
56	Cyclic poly(dimethylsiloxane) via ring-closing dehydrocoupling of Î±,Ï‰-dihydroxy-PDMS with Î±,Ï‰-dihydrido-PDMS in dilute solution. Polymer, 2010, 51, 2515-2519.	3.8	8
57	Biopolymer Nanocomposite Films Reinforced with Nanocellulose Whiskers. Journal of Nanoscience and Nanotechnology, 2012, 12, 218-226.	0.9	8
58	Accessing unconventional biofuels via reactions far from local equilibrium. Fuel, 2018, 226, 472-478.	6.4	7
59	Structural Reorganization of Noncellulosic Polymers Observed In Situ during Dilute Acid Pretreatment by Small-Angle Neutron Scattering. ACS Sustainable Chemistry and Engineering, 2022, 10, 314-322.	6.7	7
60	CHAPTER 2: BIOMASS RECALCITRANCE AND THE CONTRIBUTING CELL WALL FACTORS. Materials and Energy, 2014, , 27-44.	0.1	6
61	Recalcitrance and structural analysis by water-only flowthrough pretreatment of 13C enriched corn stover stem. Bioresource Technology, 2015, 197, 128-136.	9.6	6
62	Cyclic poly(dimethylsiloxane) from kinetically controlled cyclodepolymerization of linear precursors in dilute solution. Polymer, 2010, 51, 2112-2118.	3.8	5
63	Analysis of gas chromatography/mass spectrometry data for catalytic lignin depolymerization using positive matrix factorization. Green Chemistry, 2018, 20, 4366-4377.	9.0	4
64	Production of deuterated biomass by cultivation of Lemna minor (duckweed) in D2O. Planta, 2019, 249, 1465-1475.	3.2	3
65	Structural Determination of a New Peptidolipid Family from Rhodococcus opacus and the Pathogen Rhodococcus equi by Multiple Stage Mass Spectrometry. Journal of the American Society for Mass Spectrometry, 2020, 31, 611-623.	2.8	3
66	Silicon cantilever functionalization for cellulose-specific chemical force imaging of switchgrass. Analytical Methods, 2015, 7, 4541-4545.	2.7	2
67	Spectral Map Reconstruction Using Pan-Sharpening Algorithm: Enhancing Chemical Imaging with AFM-IR. Microscopy and Microanalysis, 2019, 25, 1024-1025.	0.4	2