Ashutosh Mittal

List of Publications by Year
in descending order

42 papers	2,263 citations	218381 26 h-index	253896 43 g-index
43 all docs	43 docs citations	43 times ranked	3308 citing authors

#	Article	IF	Citations
1	Effects of alkaline or liquid-ammonia treatment on crystalline cellulose: changes in crystalline structure and effects on enzymatic digestibility. Biotechnology for Biofuels, 2011, 4, 41.	6.2	229
2	Base-Catalyzed Depolymerization of Biorefinery Lignins. ACS Sustainable Chemistry and Engineering, 2016, 4, 1474-1486.	3.2	172
3	Production of Furfural from Process-Relevant Biomass-Derived Pentoses in a Biphasic Reaction System. ACS Sustainable Chemistry and Engineering, 2017, 5, 5694-5701.	3.2	133
4	Revisiting alkaline aerobic lignin oxidation. Green Chemistry, 2018, 20, 3828-3844.	4.6	114
5	Alkaline Pretreatment of Corn Stover: Bench-Scale Fractionation and Stream Characterization. ACS Sustainable Chemistry and Engineering, 2014, 2, 1481-1491.	3.2	109
6	Multifunctional Cellulolytic Enzymes Outperform Processive Fungal Cellulases for Coproduction of Nanocellulose and Biofuels. ACS Nano, 2017, 11, 3101-3109.	7.3	105
7	Alkaline Pretreatment of Switchgrass. ACS Sustainable Chemistry and Engineering, 2015, 3, 1479-1491.	3.2	94
8	Modeling xylan solubilization during autohydrolysis of sugar maple and aspen wood chips: Reaction kinetics and mass transfer. Chemical Engineering Science, 2009, 64, 3031-3041.	1.9	93
9	Glucose Reversion Reaction Kinetics. Journal of Agricultural and Food Chemistry, 2010, 58, 6131-6140.	2.4	84
10	Cellulose polymorphism study with sum-frequency-generation (SFG) vibration spectroscopy: identification of exocyclic CH2OH conformation and chain orientation. Cellulose, 2013, 20, 991-1000.	2.4	76
11	Ammonia Pretreatment of Corn Stover Enables Facile Lignin Extraction. ACS Sustainable Chemistry and Engineering, 2017, 5, 2544-2561.	3.2	76
12	New perspective on glycoside hydrolase binding to lignin from pretreated corn stover. Biotechnology for Biofuels, 2015, 8, 214.	6.2	75
13	Influence of Crystal Allomorph and Crystallinity on the Products and Behavior of Cellulose during Fast Pyrolysis. ACS Sustainable Chemistry and Engineering, 2016, 4, 4662-4674.	3.2	69
14	Quantitative analysis of sugars in wood hydrolyzates with 1H NMR during the autohydrolysis of hardwoods. Bioresource Technology, 2009, 100, 6398-6406.	4.8	64
15	Direct Conversion of Biomass Carbohydrates to Platform Chemicals: 5-Hydroxymethylfurfural (HMF) and Furfural. Energy & Fuels, 2020, 34, 3284-3293.	2.5	62
16	Modeling xylan solubilization during autohydrolysis of sugar maple wood meal: Reaction kinetics. Holzforschung, 2009, 63, 307-314.	0.9	60
17	Alkaline Peroxide Delignification of Corn Stover. ACS Sustainable Chemistry and Engineering, 2017, 5, 6310-6321.	3.2	60
18	Evaluation of Clean Fractionation Pretreatment for the Production of Renewable Fuels and Chemicals from Corn Stover. ACS Sustainable Chemistry and Engineering, 2014, 2, 1364-1376.	3.2	52

#	Article	IF	Citations
19	A thermodynamic investigation of the cellulose allomorphs: Cellulose(am), cellulose Iî²(cr), cellulose II(cr), and cellulose III(cr). Journal of Chemical Thermodynamics, 2015, 81, 184-226.	1.0	50
20	In situ label-free imaging of hemicellulose in plant cell walls using stimulated Raman scattering microscopy. Biotechnology for Biofuels, 2016, 9, 256.	6.2	46
21	The Multi Domain Caldicellulosiruptor bescii CelA Cellulase Excels at the Hydrolysis of Crystalline Cellulose. Scientific Reports, 2017, 7, 9622.	1.6	43
22	Prediction of Hydroxymethylfurfural Yield in Glucose Conversion through Investigation of Lewis Acid and Organic Solvent Effects. ACS Catalysis, 2020, 10, 14707-14721.	5.5	41
23	Nanomechanics of cellulose deformation reveal molecular defects that facilitate natural deconstruction. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 9825-9830.	3.3	40
24	Clean Fractionation Pretreatment Reduces Enzyme Loadings for Biomass Saccharification and Reveals the Mechanism of Free and Cellulosomal Enzyme Synergy. ACS Sustainable Chemistry and Engineering, 2014, 2, 1377-1387.	3.2	35
25	High activity CAZyme cassette for improving biomass degradation in thermophiles. Biotechnology for Biofuels, 2018, 11, 22.	6.2	35
26	Vibrational sum-frequency-generation (SFG) spectroscopy study of the structural assembly of cellulose microfibrils in reaction woods. Cellulose, 2014, 21, 2219-2231.	2.4	30
27	Dependence of Sum Frequency Generation (SFG) Spectral Features on the Mesoscale Arrangement of SFG-Active Crystalline Domains Interspersed in SFG-Inactive Matrix: A Case Study with Cellulose in Uniaxially Aligned Control Samples and Alkali-Treated Secondary Cell Walls of Plants. Journal of Physical Chemistry C, 2017, 121, 10249-10257.	1.5	22
28	Hydration and saccharification of cellulose Iî², II and IIII at increasing dry solids loadings. Biotechnology Letters, 2013, 35, 1599-1607.	1.1	21
29	Investigation of the role of lignin in biphasic xylan hydrolysis during dilute acid and organosolv pretreatment of corn stover. Green Chemistry, 2015, 17, 1546-1558.	4.6	20
30	Recalcitrance Assessment of the Agro-industrial Residues from Five Agave Species: Ionic Liquid Pretreatment, Saccharification and Structural Characterization. Bioenergy Research, 2018, 11, 551-561.	2.2	19
31	Simultaneous upgrading of biomass-derived sugars to HMF/furfural via enzymatically isomerized ketose intermediates. Biotechnology for Biofuels, 2019, 12, 253.	6.2	19
32	Evaporative Cooling of Water in a Small Vessel Under Varying Ambient Humidity. International Journal of Green Energy, 2006, 3, 347-368.	2.1	18
33	Direct Production of Propene from the Thermolysis of Poly(î²-hydroxybutyrate) (PHB). An Experimental and DFT Investigation. Journal of Physical Chemistry A, 2016, 120, 332-345.	1.1	15
34	Parameter determination and validation for a mechanistic model of the enzymatic saccharification of cellulose-I_{î²}. Biotechnology Progress, 2015, 31, 1237-1248.	1.3	12
35	An iterative computational design approach to increase the thermal endurance of a mesophilic enzyme. Biotechnology for Biofuels, 2018, 11, 189.	6.2	11
36	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

#	Article	IF	Citations
37	Chemical and Structural Effects on the Rate of Xylan Hydrolysis during Dilute Acid Pretreatment of Poplar Wood. ACS Sustainable Chemistry and Engineering, 2019, 7, 4842-4850.	3.2	10
38	Towards an Understanding of Enhanced Biomass Digestibility by In Planta Expression of a Family 5 Glycoside Hydrolase. Scientific Reports, 2017, 7, 4389.	1.6	9
39	Enzymatic Synthesis of Xylan Microparticles with Tunable Morphologies. ACS Materials Au, 2022, 2, 440-452.	2.6	9
40	Investigation of Xylose Reversion Reactions That Can Occur during Dilute Acid Pretreatment. Energy & Fuels, 2013, 27, 7389-7397.	2.5	5
41	Enzymes in Commercial Cellulase Preparations Bind Differently to Dioxane Extracted Lignins. Current Biotechnology, 2017, 6, 128-138.	0.2	4
42	Viscoelastic-mapping of cellulose nanofibrils using low-total-force contact resonance force microscopy (LTF-CRFM). Cellulose, 2022, 29, 5493-5509.	2.4	4