Peter N Ciesielski

List of Publications by Year
in descending order

65 papers	4,944 citations	117571 34 h-index	110317 64 g-index
65 all docs	65 docs citations	65 times ranked	7963 citing authors

#	Article	IF	Citations
1	Wood-Derived Materials for Green Electronics, Biological Devices, and Energy Applications. Chemical Reviews, 2016, 116, 9305-9374.	23.0	1,110
2	Enhanced mobility CsPbI ₃ quantum dot arrays for record-efficiency, high-voltage photovoltaic cells. Science Advances, 2017, 3, eaao4204.	4.7	801
3	Disruption of Mediator rescues the stunted growth of a lignin-deficient Arabidopsis mutant. Nature, 2014, 509, 376-380.	13.7	313
4	Lignin depolymerisation by nickel supported layered-double hydroxide catalysts. Green Chemistry, 2014, 16, 824-835.	4.6	161
5	cis,cis-Muconic acid: separation and catalysis to bio-adipic acid for nylon-6,6 polymerization. Green Chemistry, 2016, 18, 3397-3413.	4.6	147
6	Manipulation of Guaiacyl and Syringyl Monomer Biosynthesis in an Arabidopsis Cinnamyl Alcohol Dehydrogenase Mutant Results in Atypical Lignin Biosynthesis and Modified Cell Wall Structure. Plant Cell, 2015, 27, 2195-2209.	3.1	136
7	Real-time monitoring of the deactivation of HZSM-5 during upgrading of pine pyrolysis vapors. Green Chemistry, 2014, 16, 1444-1461.	4.6	112
8	Lignocellulose deconstruction in the biosphere. Current Opinion in Chemical Biology, 2017, 41, 61-70.	2.8	110
9	Alkaline Pretreatment of Corn Stover: Bench-Scale Fractionation and Stream Characterization. ACS Sustainable Chemistry and Engineering, 2014, 2, 1481-1491.	3.2	109
10	Multifunctional Cellulolytic Enzymes Outperform Processive Fungal Cellulases for Coproduction of Nanocellulose and Biofuels. ACS Nano, 2017, 11, 3101-3109.	7.3	105
11	Progress in understanding the four dominant intra-particle phenomena of lignocellulose pyrolysis: chemical reactions, heat transfer, mass transfer, and phase change. Green Chemistry, 2019, 21, 2868-2898.	4.6	102
12	Hydrothermal catalytic processing of saturated and unsaturated fatty acids to hydrocarbons with glycerol for in situ hydrogen production. Green Chemistry, 2014, 16, 1507.	4.6	98
13	Nanocellulose Dewatering and Drying: Current State and Future Perspectives. ACS Sustainable Chemistry and Engineering, 2020, 8, 9601-9615.	3.2	79
14	Advances in Multiscale Modeling of Lignocellulosic Biomass. ACS Sustainable Chemistry and Engineering, 2020, 8, 3512-3531.	3.2	79
15	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
16	3D Electron Tomography of Pretreated Biomass Informs Atomic Modeling of Cellulose Microfibrils. ACS Nano, 2013, 7, 8011-8019.	7.3	68
17	Biomass Particle Models with Realistic Morphology and Resolved Microstructure for Simulations of Intraparticle Transport Phenomena. Energy & Fuels, 2015, 29, 242-254.	2.5	66
18	The Structure of the Catalytic Domain of a Plant Cellulose Synthase and Its Assembly into Dimers. Plant Cell, 2014, 26, 2996-3009.	3.1	61

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19	Effect of mechanical disruption on the effectiveness of three reactors used for dilute acid pretreatment of corn stover Part 2: morphological and structural substrate analysis. Biotechnology for Biofuels, 2014, 7, 47.	6.2	61
20	Engineering plant cell walls: tuning lignin monomer composition for deconstructable biofuel feedstocks or resilient biomaterials. Green Chemistry, 2014, 16, 2627.	4.6	60
21	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
22	Towards sustainable production and utilization of plant-biomass-based nanomaterials: a review and analysis of recent developments. Biotechnology for Biofuels, 2021, 14, 114.	6.2	51
23	Effects of Moisture on Diffusion in Unmodified Wood Cell Walls: A Phenomenological Polymer Science Approach. Forests, 2019, 10, 1084.	0.9	49
24	Elucidating the role of ferrous ion cocatalyst in enhancing dilute acid pretreatment of lignocellulosic biomass. Biotechnology for Biofuels, 2011, 4, 48.	6.2	47
25	Heavy Metal-Free Tannin from Bark for Sustainable Energy Storage. Nano Letters, 2017, 17, 7897-7907.	4.5	46
26	Molybdenum incorporated mesoporous silica catalyst for production of biofuels and value-added chemicals via catalytic fast pyrolysis. Green Chemistry, 2015, 17, 3035-3046.	4.6	45
27	Not Just Lumberâ€"Using Wood in the Sustainable Future of Materials, Chemicals, and Fuels. Jom, 2016, 68, 2395-2404.	0.9	40
28	Improving Sugar Yields and Reducing Enzyme Loadings in the Deacetylation and Mechanical Refining (DMR) Process through Multistage Disk and Szego Refining and Corresponding Techno-Economic Analysis. ACS Sustainable Chemistry and Engineering, 2016, 4, 324-333.	3.2	40
29	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
30	Effect of mechanical disruption on the effectiveness of three reactors used for dilute acid pretreatment of corn stover Part 1: chemical and physical substrate analysis. Biotechnology for Biofuels, 2014, 7, 57.	6.2	39
31	Integrated Particle- and Reactor-Scale Simulation of Pine Pyrolysis in a Fluidized Bed. Energy & Fuels, 2018, 32, 10683-10694.	2.5	39
32	Assessment of a detailed biomass pyrolysis kinetic scheme in multiscale simulations of a single-particle pyrolyzer and a pilot-scale entrained flow pyrolyzer. Chemical Engineering Journal, 2021, 418, 129347.	6.6	38
33	Quantifying cellulose accessibility during enzyme-mediated deconstruction using 2 fluorescence-tagged carbohydrate-binding modules. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 22545-22551.	3.3	37
34	Investigating biomass composition and size effects on fast pyrolysis using global sensitivity analysis and CFD simulations. Chemical Engineering Journal, 2021, 421, 127789.	6.6	36
35	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
36	Mesoscale Reactionâ€"Diffusion Phenomena Governing Ligninâ€First Biomass Fractionation. ChemSusChem, 2020, 13, 4495-4509.	3.6	35

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37	Beyond the effectiveness factor: Multi-step reactions with intraparticle diffusion limitations. Chemical Engineering Journal, 2020, 380, 122507.	6.6	31
38	Tailorable cellulose II nanocrystals (CNC II) prepared in mildly acidic lithium bromide trihydrate (MALBTH). Green Chemistry, 2021, 23, 2778-2791.	4.6	31
39	Multiscale deconstruction of molecular architecture in corn stover. Scientific Reports, 2014, 4, 3756.	1.6	30
40	Advancing catalytic fast pyrolysis through integrated multiscale modeling and experimentation: Challenges, progress, and perspectives. Wiley Interdisciplinary Reviews: Energy and Environment, 2018, 7, e297.	1.9	30
41	Pilot-Scale Batch Alkaline Pretreatment of Corn Stover. ACS Sustainable Chemistry and Engineering, 2016, 4, 944-956.	3.2	29
42	Low-Order Modeling of Internal Heat Transfer in Biomass Particle Pyrolysis. Energy & Fuels, 2016, 30, 4960-4969.	2.5	25
43	Multiscale Alterations in Sugar Cane Bagasse and Straw Submitted to Alkaline Deacetylation. ACS Sustainable Chemistry and Engineering, 2018, 6, 3796-3804.	3.2	21
44	Estimation of Heat Transfer Coefficients for Biomass Particles by Direct Numerical Simulation Using Microstructured Particle Models in the Laminar Regime. ACS Sustainable Chemistry and Engineering, 2017, 5, 1046-1053.	3.2	20
45	Measurement of moisture-dependent ion diffusion constants in wood cell wall layers using time-lapse micro X-ray fluorescence microscopy. Scientific Reports, 2020, 10, 9919.	1.6	18
46	Multi-scale simulation of reaction, transport and deactivation in a SBA-16 supported catalyst for the conversion of ethanol to butadiene. Catalysis Today, 2019, 338, 141-151.	2.2	17
47	Impacts of Anisotropic Porosity on Heat Transfer and Off-Gassing during Biomass Pyrolysis. Energy & Fuels, 2021, 35, 20131-20141.	2.5	17
48	Understanding Trends in Autoignition of Biofuels: Homologous Series of Oxygenated C5 Molecules. Journal of Physical Chemistry A, 2017, 121, 5475-5486.	1.1	16
49	Biomass accessibility analysis using electron tomography. Biotechnology for Biofuels, 2015, 8, 212.	6.2	14
50	CFDâ€“DEM modeling of autothermal pyrolysis of corn stover with a coupled particle- and reactor-scale framework. Chemical Engineering Journal, 2022, 446, 136920.	6.6	14
51	Preservation and Preparation of Lignocellulosic Biomass Samples for Multi-scale Microscopy Analysis. Methods in Molecular Biology, 2012, 908, 31-47.	0.4	13
52	Minimizing Oxygen Permeability in Chitin/Cellulose Nanomaterial Coatings by Tuning Chitin Deacetylation. ACS Sustainable Chemistry and Engineering, 2022, 10, 124-133.	3.2	13
53	Directed plant cell-wall accumulation of iron: embedding co-catalyst for efficient biomass conversion. Biotechnology for Biofuels, 2016, 9, 225.	6.2	12
54	Bridging Scales in Bioenergy and Catalysis: A Review of Mesoscale Modeling Applications, Methods, and Future Directions. Energy & Fuels, 2021, 35, 14382-14400.	2.5	12

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55	<i>Ex situ</i> upgrading of pyrolysis vapors over PtTiO₂: extraction of apparent kinetics <i>via</i> hierarchical transport modeling. Reaction Chemistry and Engineering, 2021, 6, 125-137.	1.9	11
56	Hierarchically Structured CeO2 Catalyst Particles From Nanocellulose/Alginate Templates for Upgrading of Fast Pyrolysis Vapors. Frontiers in Chemistry, 2019, 7, 730.	1.8	10
57	Estimating the Temperature Experienced by Biomass Particles during Fast Pyrolysis Using Microscopic Analysis of Biochars. Energy & Fuels, 2017, 31, 8193-8201.	2.5	9
58	Catalyst Residence Time Distributions in Riser Reactors for Catalytic Fast Pyrolysis. Part 2: Pilot-Scale Simulations and Operational Parameter Study. ACS Sustainable Chemistry and Engineering, 2017, 5, 2857-2866.	3.2	8
59	Predictive Model for Particle Residence Time Distributions in Riser Reactors. Part 1: Model Development and Validation. ACS Sustainable Chemistry and Engineering, 2017, 5, 2847-2856.	3.2	6
60	CHAPTER 11. Simulating Biomass Fast Pyrolysis at the Single Particle Scale. RSC Green Chemistry, 2017, , 231-253.	0.0	5
61	Mass Transport Limitations and Kinetic Consequences of Corn Stover Deacetylation. Frontiers in Energy Research, 2022, 10, .	1.2	5
62	Predicting thermal excursions during <i>in situ</i> oxidative regeneration of packed bed catalytic fast pyrolysis catalyst. Reaction Chemistry and Engineering, 2021, 6, 888-904.	1.9	4
63	Ferrous and Ferric Ion-Facilitated Dilute Acid Pretreatment of Lignocellulosic Biomass under Anaerobic or Aerobic Conditions: Observations of Fe Valence Interchange and the Role of Fenton Reaction. Molecules, 2020, 25, 1427.	1.7	3
64	Measurement of Transport Properties of Woody Biomass Feedstock Particles Before and After Pyrolysis by Numerical Analysis of X-Ray Tomographic Reconstructions. Frontiers in Energy Research, 2022, 10, .	1.2	3
65	A simplified integrated framework for predicting the economic impacts of feedstock variations in a catalytic fast pyrolysis conversion process. Biofuels, Bioproducts and Biorefining, 0, , .	1.9	1