Timothy Rials

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/5255584/publications.pdf

Version: 2024-02-01

67 papers	3,550 citations	159358 30 h-index	133063 59 g-index
69 all docs	69 docs citations	69 times ranked	4361 citing authors

#	Article	IF	Citations
1	Recent advances in lowâ€cost carbon fiber manufacture from lignin. Journal of Applied Polymer Science, 2013, 130, 713-728.	1.3	542
2	Surface Functionality and Carbon Structures in Lignocellulosic-Derived Biochars Produced by Fast Pyrolysis. Energy & Fuels, 2011, 25, 4693-4703.	2.5	220
3	Poly(vinyl alcohol) nanocomposites reinforced with cellulose fibrils isolated by high intensity ultrasonication. Composites Part A: Applied Science and Manufacturing, 2009, 40, 218-224.	3.8	201
4	Physical and mechanical properties of polyvinyl alcohol and polypropylene composite materials reinforced with fibril aggregates isolated from regenerated cellulose fibers. Cellulose, 2007, 14, 593-602.	2.4	183
5	Effects of hemicellulose extraction on properties of wood flour and woodâ€“plastic composites. Composites Part A: Applied Science and Manufacturing, 2012, 43, 686-694.	3.8	166
6	FT-IR imaging and pyrolysis-molecular beam mass spectrometry: new tools to investigate wood tissues. Wood Science and Technology, 2005, 39, 61-76.	1.4	143
7	Analysis of preservative-treated wood by multivariate analysis of laser-induced breakdown spectroscopy spectra. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2005, 60, 1179-1185.	1.5	139
8	Nanoindentation of wood cell walls: Continuous stiffness and hardness measurements. Composites Part A: Applied Science and Manufacturing, 2007, 38, 945-953.	3.8	128
9	Engineering plastics from lignin II. Characterization of hydroxyalkyl lignin derivatives. Journal of Applied Polymer Science, 1984, 29, 1815-1830.	1.3	103
10	Rheology of 1â€butylâ€3â€methylimidazolium chloride cellulose solutions. I. Shear rheology. Journal of Applied Polymer Science, 2008, 110, 1175-1181.	1.3	92
11	Adhesive penetration of wood cell walls investigated by scanning thermal microscopy (SThM). Holzforschung, 2008, 62, 91-98.	0.9	92
12	A study of poplar organosolv lignin after melt rheology treatment as carbon fiber precursors. Green Chemistry, 2016, 18, 5015-5024.	4.6	85
13	Role of Physicochemical Structure of Organosolv Hardwood and Herbaceous Lignins on Carbon Fiber Performance. ACS Sustainable Chemistry and Engineering, 2016, 4, 5785-5798.	3.2	84
14	Relationship of Wood Surface Energy to Surface Composition. Langmuir, 1998, 14, 536-541.	1.6	82
15	Characterization of the interface between cellulosic fibers and a thermoplastic matrix. Composite Interfaces, 1994, 2, 419-432.	1.3	78
16	Chemical Structure of Wood Charcoal by Infrared Spectroscopy and Multivariate Analysis. Journal of Agricultural and Food Chemistry, 2006, 54, 3492-3497.	2.4	71
17	Thermal and dynamic mechanical properties of hydroxypropyl cellulose films. Journal of Applied Polymer Science, 1988, 36, 749-758.	1.3	70
18	Improving Processing and Performance of Pure Lignin Carbon Fibers through Hardwood and Herbaceous Lignin Blends. International Journal of Molecular Sciences, 2017, 18, 1410.	1.8	67

#	Article	IF	Citations
19	Synthesis and characterization of lignin carbon fiber and composites. Composites Science and Technology, 2016, 137, 60-68.	3.8	59
20	Effects of decreasing carbohydrate content on properties of wood strands. Cellulose, 2011, 18, 841-850.	2.4	56
21	Poplar and shrub willow energy crops in the United States: field trial results from the multiyear regional feedstock partnership and yield potential maps based on the PRISMâ€ELM model. GCB Bioenergy, 2018, 10, 735-751.	2.5	54
22	Extraction of information from laser-induced breakdown spectroscopy spectral data by multivariate analysis. Applied Optics, 2008, 47, G158.	2.1	53
23	Interfacial contributions in lignocellulosic fiber-reinforced polyurethane composites. Journal of Applied Polymer Science, 2001, 80, 546-555.	1.3	52
24	Multiphase materials with lignin. IV. Blends of hydroxypropyl cellulose with lignin. Journal of Applied Polymer Science, 1989, 37, 2399-2415.	1.3	42
25	Atomic Force Microscopy of the Intervessel Pit Membrane in the Stem of Sapium Sebiferum (Euphorbiaceae). IAWA Journal, 2005, 26, 397-426.	2.7	42
26	Effect of pH on surface characteristics of switchgrass-derived biochars produced by fast pyrolysis. Chemosphere, 2013, 90, 2623-2630.	4.2	39
27	Blended Feedstocks for Thermochemical Conversion: Biomass Characterization and Bio-Oil Production From Switchgrass-Pine Residues Blends. Frontiers in Energy Research, 2018, 6, .	1.2	35
28	Sustainable Hydrogels Based on Lignin-Methacrylate Copolymers with Enhanced Water Retention and Tunable Material Properties. Biomacromolecules, 2018, 19, 2665-2672.	2.6	34
29	Evidence for Complex Molecular Architectures for Solvent-Extracted Lignins. ACS Macro Letters, 2012, 1, 568-573.	2.3	33
30	Engineering plastics from lignin. XVII. Effect of molecular weight on polyurethane film properties. Journal of Applied Polymer Science, 1989, 37, 2961-2971.	1.3	31
31	Evaluation of the cure kinetics of the wood/pMDI bondline. International Journal of Adhesion and Adhesives, 2001, 21, 137-144.	1.4	31
32	Effects of organosolv fractionation time on thermal and chemical properties of lignins. RSC Advances, 2016, 6, 79228-79235.	1.7	31
33	Effects of Hot Water Extraction on Physical and Chemical Characteristics of Oriented Strand Board (OSB) Wood Flakes. Clean - Soil, Air, Water, 2008, 36, 674-681.	0.7	30
34	Chemical and anatomical changes in Liquidambar styraciflua L. xylem after long term exposure to elevated CO2. Environmental Pollution, 2015, 198, 179-185.	3.7	29
35	Engineering Plastics from Lignin. X. Enthalpy Relaxation of Prepolymers. Journal of Wood Chemistry and Technology, 1984, 4, 331-345.	0.9	27
36	Multiphase materials with lignin: 5. Effect of lignin structure on hydroxypropyl cellulose blend morphology. Polymer, 1990, 31, 1333-1338.	1.8	24

#	Article	IF	Citations
37	Preparation and characterization of cellulose acetate organic/inorganic hybrid films. Journal of Applied Polymer Science, 1995, 58, 1263-1274.	1.3	23
38	Statics and kinetics of water vapor sorption of small loblolly pine samples. Wood Science and Technology, 2008, 42, 493-506.	1.4	23
39	Controlled Assembly of Lignocellulosic Biomass Components and Properties of Reformed Materials. ACS Sustainable Chemistry and Engineering, 2017, 5, 8044-8052.	3.2	22
40	Time domain-nuclear magnetic resonance study of chars from southern hardwoodsâˆ†. Biomass and Bioenergy, 2006, 30, 855-862.	2.9	21
41	Effect of Hemicellulose Extraction on Physical and Mechanical Properties and Mold Susceptibility of Flakeboard. Forest Products Journal, 2011, 61, 31-37.	0.2	21
42	Assessment of wood load condition by Near Infrared (NIR) spectroscopy. Journal of Materials Science, 2006, 41, 1879-1886.	1.7	16
43	Screening of Mixed-Metal Oxide Species for Catalytic Ex Situ Vapor-Phase Deoxygenation of Cellulose by py-GC/MS Coupled with Multivariate Analysis. Energy & Fuels, 2016, 30, 3167-3174.	2.5	16
44	Rheology of 1â€butylâ€3â€methylimidazolium chloride cellulose solutions. III. Elongational rheology. Journal of Applied Polymer Science, 2008, 110, 3203-3208.	1.3	15
45	Correlation of Near-Infrared Spectroscopy Measurements with the Properties of Treated Wood. Journal of Materials in Civil Engineering, 2007, 19, 279-285.	1.3	13
46	The reaction of boric acid with wood in a polystyrene matrix. Journal of Applied Polymer Science, 1996, 62, 501-508.	1.3	11
47	Using dynamic mechanical spectroscopy to monitor the crystallization of PP/MAPP blends in the presence of wood. Composite Interfaces, 2000, 7, 3-12.	1.3	11
48	On-Line Monitoring of the Buffer Capacity of Particleboard Furnish by Near-Infrared Spectroscopy. Applied Spectroscopy, 2006, 60, 1204-1209.	1.2	11
49	Nanoindentation of biodegradable cellulose diacetate-graft-poly(L-lactide) copolymers: Effect of molecular composition and thermal aging on mechanical properties. Journal of Polymer Science, Part B: Polymer Physics, 2007, 45, 1114-1121.	2.4	11
50	FTIR imaging coupled with multivariate analysis for study of initial diffusion of different solvents in cellulose acetate butyrate films. Cellulose, 2008, 15, 23-33.	2.4	11
51	Structure and thermomechanical properties of stretched cellulose films. Journal of Applied Polymer Science, 2013, 128, 181-187.	1.3	10
52	Anatomical characteristics, microfibril angle and micromechanical properties of cottonwood (Populus deltoides) and its hybrids. Biomass and Bioenergy, 2016, 93, 72-77.	2.9	10
53	Orientation of carbon fiber precursors from 1â€butylâ€3â€metylimidazoluim chloride cellulose solutions. Journal of Applied Polymer Science, 2013, 128, 951-957.	1.3	8
54	Effect of chain structure on the miscibility of cellulose acetate blends: a small-angle neutron scattering study. Soft Matter, 2013, 9, 3402.	1.2	8

#	Article	IF	Citations
55	Investigating interphase development in woodpolymer composites by inverse gas chromatography. Composite Interfaces, 2000, 7, 81-92.	1.3	6
56	Two-dimensional homo- and hetero-correlation technique applied to NIR and py-MBMS spectra of wood. Holzforschung, 2008, 62, 176-182.	0.9	6
57	Editorial: Advancements in Biomass Feedstock Preprocessing: Conversion Ready Feedstocks. Frontiers in Energy Research, 2019, 7, .	1.2	6
58	Fabrication optimization of polypropylene composites reinforced with steam-exploded wood flour by wet process. European Journal of Wood and Wood Products, 2009, 67, 449.	1.3	5
59	Effects of Refiner Pressure On the Properties of Individual Wood Fibers. , 0, , 227-240.		4
60	Comparison of Near Infrared Reflectance Spectroscopy with Combustion and Chemical Methods for Soil Carbon Measurements in Agricultural Soils. Communications in Soil Science and Plant Analysis, 2016, 47, 731-742.	0.6	4
61	A Robust Method to Quantify Cell Wall Bound Phenolics in Plant Suspension Culture Cells Using Pyrolysis-Gas Chromatography/Mass Spectrometry. Frontiers in Plant Science, 2020, 11, 574016.	1.7	3
62	Accurately estimating and minimizing costs for the cellulosic biomass supply chain with statistical process control and the Taguchi Loss Function. BioResources, 2019, 14, 2961-2976.	0.5	2
63	FTIR Imaging of Wood and Wood Composites. , 0, , 110-122.		1
64	Compatibilization of Natural Fibers with Synthetic Polymers Using Triblock Copolymers as Coupling Agents. Macromolecular Chemistry and Physics, 2008, 209, 832-845.	1.1	1
65	Summary Report on the 2012 Sun Grant National Conference: Science for Biomass Feedstock Production and Utilization. Bioenergy Research, 2014, 7, 765-768.	2.2	1
66	Optimization of Component Yields and Thermal Properties by Organosolv Fractionation of Loblolly Pine (Pinus taeda) Using Response Surface Design. Bioenergy Research, 2018, 11, 652-664.	2.2	1
67	Detecting special-cause variation â€˜eventsâ€™ from process data signatures. Journal of Applied Statistics, 2019, 46, 3032-3043.	0.6	1