J Carson Meredith

List of Publications by Year
in descending order

117 papers	5,121 citations	109321 35 h-index	95266 68 g-index
122 all docs	122 docs citations	122 times ranked	6646 citing authors

#	Article	IF	Citations
1	The effect of scaffold degradation rate on three-dimensional cell growth and angiogenesis. Biomaterials, 2004, 25, 5735-5742.	11.4	686
2	Adsorption-Induced Conformational Changes in Fibronectin Due to Interactions with Well-Defined Surface Chemistries. Langmuir, 2003, 19, 8033-8040.	3.5	251
3	Combinatorial Materials Science for Polymer Thin-Film Dewetting. Macromolecules, 2000, 33, 9747-9756.	4.8	217
4	High-Throughput Measurement of Polymer Blend Phase Behavior. Macromolecules, 2000, 33, 5760-5762.	4.8	178
5	Mechanical and thermal properties of waterborne epoxy composites containing cellulose nanocrystals. Polymer, 2013, 54, 6589-6598.	3.8	175
6	Quantitative Equilibrium Constants between CO2and Lewis Bases from FTIR Spectroscopy. The Journal of Physical Chemistry, 1996, 100, 10837-10848.	2.9	161
7	Combinatorial characterization of cell interactions with polymer surfaces. Journal of Biomedical Materials Research - Part A, 2003, 66A, 483-490.	4.0	151
8	Combinatorial Study of Surface Pattern Formation in Thin Block Copolymer Films. Physical Review Letters, 2001, 87, 015503.	7.8	112
9	LCST phase separation in biodegradable polymer blends: poly(D,L-lactide) and poly(Îµ-caprolactone). Macromolecular Chemistry and Physics, 2000, 201, 733-739.	2.2	109
10	Facile Preparation of Highly-Scattering Metal Nanoparticle-Coated Polymer Microbeads and Their Surface Plasmon Resonance. Journal of the American Chemical Society, 2009, 131, 5048-5049.	13.7	109
11	Site-Selective Modification of Cellulose Nanocrystals with Isophorone Diisocyanate and Formation of Polyurethane-CNC Composites. ACS Applied Materials & Interfaces, 2016, 8, 1458-1467.	8.0	108
12	High-Throughput Screening of Metalâ€“Organic Frameworks for CO₂ Separation. ACS Combinatorial Science, 2012, 14, 263-267.	3.8	106
13	Combinatorial Methods for Investigations in Polymer Materials Science. MRS Bulletin, 2002, 27, 330-335.	3.5	103
14	Spray-Coated Multilayer Cellulose Nanocrystalâ€”Chitin Nanofiber Films for Barrier Applications. ACS Sustainable Chemistry and Engineering, 2018, 6, 10637-10644.	6.7	102
15	Multifunctional Bioâ€Nanocomposite Coatings for Perishable Fruits. Advanced Materials, 2020, 32, e1908291.	21.0	97
16	MOF stability and gas adsorption as a function of exposure to water, humid air, SO2, and NO2. Microporous and Mesoporous Materials, 2013, 173, 86-91.	4.4	94
17	Relationship between polymer chain conformation and phase boundaries in a supercritical fluid. Journal of Chemical Physics, 1997, 107, 10782-10792.	3.0	85
18	High-Throughput Discovery of Structureâˆ’Mechanical Property Relationships for Segmented Poly(urethaneâˆ’urea)s. Macromolecules, 2004, 37, 2186-2195.	4.8	81

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19	Phase Diagram of a Nearly Isorefractive Polyolefin Blend. Macromolecules, 2002, 35, 1072-1078.	4.8	79
20	Assembly of Chitin Nanofibers into Porous Biomimetic Structures via Freeze Drying. ACS Macro Letters, 2014, 3, 185-190.	4.8	75
21	High-throughput characterization of pattern formation in symmetric diblock copolymer films. Journal of Polymer Science, Part B: Polymer Physics, 2001, 39, 2141-2158.	2.1	72
22	Facile Route to Produce Chitin Nanofibers as Precursors for Flexible and Transparent Gas Barrier Materials. Biomacromolecules, 2014, 15, 4614-4620.	5.4	70
23	Pollenkitt Wetting Mechanism Enables Species-Specific Tunable Pollen Adhesion. Langmuir, 2013, 29, 3012-3023.	3.5	69
24	Mechanical reinforcement and thermal properties of PVA tricomponent nanocomposites with chitin nanofibers and cellulose nanocrystals. Composites Part A: Applied Science and Manufacturing, 2019, 116, 147-157.	7.6	59
25	Chitin- and cellulose-based sustainable barrier materials: a review. Emergent Materials, 2020, 3, 919-936.	5.7	57
26	Combinatorial investigation of dewetting: polystyrene thin films on gradient hydrophilic surfaces. Polymer, 2003, 44, 769-772.	3.8	56
27	Theory of Polymer Adsorption and Colloid Stabilization in Supercritical Fluids. 2. Copolymer and End-Grafted Stabilizers. Macromolecules, 1998, 31, 5518-5528.	4.8	55
28	Highly Scattering, Surface-Enhanced Raman Scattering-Active, Metal Nanoparticle-Coated Polymers Prepared via Combined Swellingâ˜Heteroaggregation. Chemistry of Materials, 2009, 21, 5654-5663.	6.7	55
29	Dye-labeled polystyrene latex microspheres prepared via a combined swelling-diffusion technique. Journal of Colloid and Interface Science, 2011, 363, 137-144.	9.4	49
30	Quantitative High-Throughput Screening of Osteoblast Attachment, Spreading, and Proliferation on Demixed Polymer Blend Micropatterns. Biomacromolecules, 2007, 8, 1907-1917.	5.4	44
31	Simulation of structure and interaction forces for surfaces coated with grafted chains in a compressible solvent. Journal of Chemical Physics, 1998, 109, 6424-6434.	3.0	41
32	Characterization of Ragweed Pollen Adhesion to Polyamides and Polystyrene Using Atomic Force Microscopy. Environmental Science & Technology, 2009, 43, 4308-4313.	10.0	41
33	Conversion of Pollen Particles into Three-Dimensional Ceramic Replicas Tailored for Multimodal Adhesion. Chemistry of Materials, 2013, 25, 4529-4536.	6.7	41
34	Interfacial Activity of Nonamphiphilic Particles in Fluidâ€“Fluid Interfaces. Langmuir, 2017, 33, 4511-4519.	3.5	41
35	Effect of water absorption on pollen adhesion. Journal of Colloid and Interface Science, 2015, 442, 133-139.	9.4	38
36	Exploiting colloidal interfaces to increase dispersion, performance, and pot-life in cellulose nanocrystal/waterborne epoxy composites. Polymer, 2015, 68, 111-121.	3.8	38

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37	The use of temperatureâ€“composition combinatorial libraries to study the effects of biodegradable polymer blend surfaces on vascular cells. Biomaterials, 2005, 26, 4557-4567.	11.4	37
38	Capillary Foams: Stabilization and Functionalization of Porous Liquids and Solids. Langmuir, 2015, 31, 2669-2676.	3.5	37
39	High-Throughput Characterization of Novel PVDF/Acrylic Polyelectrolyte Semi-Interpenetrated Network Proton Exchange Membranes. Macromolecules, 2010, 43, 7625-7636.	4.8	36
40	Organization of Hybrid Dendrimerâ^'Inorganic Nanoparticles on Amphiphilic Surfaces. Macromolecules, 2002, 35, 4852-4854.	4.8	35
41	High-throughput mechanical characterization of free-standing polymer films. Review of Scientific Instruments, 2005, 76, 062214.	1.3	35
42	Controlling Barrier and Mechanical Properties of Cellulose Nanocrystals by Blending with Chitin Nanofibers. Biomacromolecules, 2020, 21, 545-555.	5.4	35
43	Combinatorial methods for polymer materials science: Phase behavior of nanocomposite blend films. Polymer Engineering and Science, 2002, 42, 1836-1840.	3.1	34
44	Advances in combinatorial and high-throughput screening of biofunctional polymers for gene delivery, tissue engineering and anti-fouling coatings. Journal of Materials Chemistry, 2009, 19, 34-45.	6.7	32
45	Simulation of Interaction Forces between Nanoparticles:â€‰ End-Grafted Polymer Modifiers. Journal of Chemical Theory and Computation, 2006, 2, 1624-1631.	5.3	30
46	Poly(ethylene oxide) bionanocomposites reinforced with chitin nanofiber networks. Polymer, 2016, 84, 267-274.	3.8	30
47	Theory of Polymer Adsorption and Colloid Stabilization in Supercritical Fluids. 1. Homopolymer Stabilizers. Macromolecules, 1998, 31, 5507-5517.	4.8	29
48	High-Throughput Screening of Mechanical Properties on Temperature-Gradient Polyurethaneurea Libraries. Macromolecular Rapid Communications, 2003, 24, 118-122.	3.9	28
49	Rheological behavior of highly loaded cellulose nanocrystal/poly(vinyl alcohol) composite suspensions. Cellulose, 2016, 23, 3001-3012.	4.9	28
50	Measuring the Influence of Solution Chemistry on the Adhesion of Au Nanoparticles to Mica Using Colloid Probe Atomic Force Microscopy. Langmuir, 2010, 26, 13995-14003.	3.5	27
51	Pollen fillers for reinforcing and strengthening of epoxy composites. Emergent Materials, 2018, 1, 95-103.	5.7	27
52	Measurement of polyamide and polystyrene adhesion with coated-tip atomic force microscopy. Journal of Colloid and Interface Science, 2007, 314, 52-62.	9.4	23
53	Bubble Meets Droplet: Particleâ€Assisted Reconfiguration of Wetting Morphologies in Colloidal Multiphase Systems. Small, 2016, 12, 3309-3319.	10.0	23
54	Stabilization of Liquid Foams through the Synergistic Action of Particles and an Immiscible Liquid. Angewandte Chemie - International Edition, 2014, 53, 13385-13389.	13.8	21

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55	Cloud condensation nuclei activity of six pollenkitts and the influence of their surface activity. Atmospheric Chemistry and Physics, 2019, 19, 4741-4761.	4.9	21
56	Role of Lewis Basicity and van der Waals Forces in Adhesion of Silica MFI Zeolites (010) with Polyimides. Langmuir, 2009, 25, 9101-9107.	3.5	20
57	Adhesion Enhancements and Surface-Enhanced Raman Scattering Activity of Ag and Ag@SiO₂ Nanoparticle Decorated Ragweed Pollen Microparticle Sensor. ACS Applied Materials & Interfaces, 2017, 9, 24804-24811.	8.0	20
58	Humidity-tolerant rate-dependent capillary viscous adhesion of bee-collected pollen fluids. Nature Communications, 2019, 10, 1379.	12.8	20
59	Simulation of Interaction Forces between Nanoparticles in the Presence of Lennardâ^'Jones Polymers:Â Freely Adsorbing Homopolymer Modifiers. Langmuir, 2005, 21, 487-497.	3.5	19
60	High-throughput dynamic impact characterization of polymer films. Materials Research Innovations, 2003, 7, 295-301.	2.3	18
61	Combinatorial screening of organic electronic materials: thin film stability. Measurement Science and Technology, 2005, 16, 128-136.	2.6	18
62	Quantification of E. coli adhesion to polyamides and polystyrene with atomic force microscopy. Colloids and Surfaces B: Biointerfaces, 2008, 65, 308-312.	5.0	18
63	Surface treated pollen performance as a renewable reinforcing filler for poly(vinyl acetate). Journal of Materials Chemistry A, 2014, 2, 17031-17040.	10.3	18
64	Pressure sensitive microparticle adhesion through biomimicry of the pollenâ€“stigma interaction. Soft Matter, 2016, 12, 2965-2975.	2.7	18
65	The atypically high modulus of pollen exine. Journal of the Royal Society Interface, 2018, 15, 20180533.	3.4	18
66	Three-dimensional magnetite replicas of pollen particles with tailorable and predictable multimodal adhesion. Journal of Materials Chemistry C, 2015, 3, 632-643.	5.5	17
67	Density Dependence of Homopolymer Adsorption and Colloidal Interaction Forces in a Supercritical Solvent:Â Monte Carlo Simulation. Langmuir, 1999, 15, 8037-8044.	3.5	16
68	Surface Structure Patterning for Fabricating Non-fluorinated Superhydrophobic Cellulosic Membranes. ACS Applied Polymer Materials, 2019, 1, 1220-1229.	4.4	16
69	The Solution is the Solution: Data-Driven Elucidation of Solution-to-Device Feature Transfer for Ï€-Conjugated Polymer Semiconductors. ACS Applied Materials & Interfaces, 2022, 14, 3613-3620.	8.0	16
70	High-throughput screening of ionic conductivity in polymer membranes. Electrochimica Acta, 2009, 54, 3899-3909.	5.2	15
71	The dynamics of rising oil-coated bubbles: experiments and simulations. Soft Matter, 2018, 14, 2724-2734.	2.7	15
72	Simulation of nanocolloid chemical potentials in a hard-sphere polymer solution: Expanded ensemble Monte Carlo. Journal of Chemical Physics, 2002, 117, 5443-5451.	3.0	14

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73	Instability and Dewetting of Conducting-Insulating Polymer Thin-Film Bilayers. Macromolecular Rapid Communications, 2004, 25, 275-279.	3.9	14
74	Osmotic pressure and chemical potential of silica nanoparticles in aqueous poly(ethyleneoxide) solution. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2008, 317, 129-135.	4.7	14
75	Effect of nanowhisker-modified zeolites on mechanical and thermal properties of poly(vinyl acetate) composites with pure-silica MFI. Polymer, 2010, 51, 5744-5755.	3.8	14
76	Non-DLVO Silica Interaction Forces in NMPâ€“Water Mixtures. I. A Symmetric System. Langmuir, 2011, 27, 6897-6904.	3.5	14
77	Enabling zero added-coalescent waterborne acrylic coatings with cellulose nanocrystals. Progress in Organic Coatings, 2021, 150, 105969.	3.9	14
78	Non-DLVO Silica Interaction Forces in NMPâ€“Water Mixtures. II. An Asymmetric System. Langmuir, 2011, 27, 10000-10006.	3.5	13
79	Capillary Foams: Formation Stages and Effects of System Parameters. Industrial & Engineering Chemistry Research, 2017, 56, 9533-9540.	3.7	13
80	Small Data Machine Learning: Classification and Prediction of Poly(ethylene terephthalate) Stabilizers Using Molecular Descriptors. ACS Applied Polymer Materials, 2020, 2, 5592-5601.	4.4	13
81	Minimizing Oxygen Permeability in Chitin/Cellulose Nanomaterial Coatings by Tuning Chitin Deacetylation. ACS Sustainable Chemistry and Engineering, 2022, 10, 124-133.	6.7	13
82	Pollen: A Novel, Biorenewable Filler for Polymer Composites. Macromolecular Materials and Engineering, 2011, 296, 1055-1062.	3.6	11
83	Bioenabled Core/Shell Microparticles with Tailored Multimodal Adhesion and Optical Reflectivity. Chemistry of Materials, 2015, 27, 7321-7330.	6.7	11
84	Rheology of capillary foams. Soft Matter, 2020, 16, 6725-6732.	2.7	11
85	Photostability of Ambient-Processed, Conjugated Polymer Electrochromic Devices Encapsulated by Bioderived Barrier Films. ACS Sustainable Chemistry and Engineering, 2021, 9, 2937-2945.	6.7	11
86	Spectroscopy: the fourth vertex on the molecular thermodynamics tetrahedron. Fluid Phase Equilibria, 1996, 116, 385-394.	2.5	10
87	Nanoscale Colloids in a Freely Adsorbing Polymer Solution:â€‰ A Monte Carlo Simulation Study. Langmuir, 2004, 20, 1501-1510.	3.5	10
88	Tunable multimodal adhesion of 3D, nanocrystalline CoFe 2 O 4 pollen replicas. Bioinspiration and Biomimetics, 2017, 12, 066009.	2.9	10
89	Synergistic Reinforcement of Composite Hydrogels with Nanofiber Mixtures of Cellulose Nanocrystals and Chitin Nanofibers. Biomacromolecules, 2021, 22, 340-352.	5.4	10
90	Increasing efficiency of the homogenization process for production of chitin nanofibers for barrier film applications. Carbohydrate Polymers, 2021, 274, 118658.	10.2	10

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91	Acrylic Functionalization of Cellulose Nanocrystals with 2-Isocyanatoethyl Methacrylate and Formation of Composites with Poly(methyl methacrylate). ACS Omega, 2020, 5, 31092-31099.	3.5	9
92	Composite proton exchange membranes from zirconiumâ€based solid acids and PVDF/acrylic polyelectrolyte blends. Journal of Applied Polymer Science, 2012, 124, E241.	2.6	8
93	Osteoblast Adhesion and Proliferation on Poly(3â€octylthiophene) Thin Films. Macromolecular Bioscience, 2010, 10, 258-264.	4.1	7
94	Morphological Factors Involved in Adhesion of Acid-Cleaned Diatom Silica. Silicon, 2014, 6, 95-107.	3.3	7
95	High Throughput Screening of Mechanical Properties and Scratch Resistance of Tricomponent Polyurethane Coatings. ACS Applied Polymer Materials, 2019, 1, 3064-3073.	4.4	7
96	Continuous stabilization of polyacrylonitrile (PAN) - carbon nanotube (CNT) fibers by Joule heating. Chemical Engineering Science, 2021, 236, 116495.	3.8	7
97	Encapsulation of cellulose nanocrystals into acrylic latex particles via miniemulsion polymerization. Polymer, 2022, 240, 124488.	3.8	7
98	Local cell metrics: a novel method for analysis of cell-cell interactions. BMC Bioinformatics, 2009, 10, 350.	2.6	6
99	Local Histogram Analysis: Detecting Cell-Microstructure Interactions on Combinatorial Biomaterial Libraries. Combinatorial Chemistry and High Throughput Screening, 2009, 12, 626-633.	1.1	6
100	Spatially Resolved Solid-State ¹H NMR for Evaluation of Gradient-Composition Polymeric Libraries. ACS Combinatorial Science, 2012, 14, 415-424.	3.8	5
101	Adhesion Improvements of Nanocellulose Composite Interfaces. Plastics Engineering, 2013, 69, 32-37.	0.0	5
102	Structureâ€“Property Relationship in Capillary Foams. Langmuir, 2021, 37, 10510-10520.	3.5	5
103	Acryloyl-modified cellulose nanocrystals: effects of substitution on crystallinity and copolymerization with acrylic monomers. Cellulose, 2021, 28, 10875-10889.	4.9	5
104	Combinatorial Polymer Science: Synthesis and Characterization. ACS Symposium Series, 2002, , 23-47.	0.5	4
105	Mechanical and Thermal Properties of Poly(urethane urea) Nanocomposites Prepared with Diamine-Modified Laponite. Journal of Nanomaterials, 2008, 2008, 1-9.	2.7	4
106	Effect of Poly(3â€octylthiophene) Doping on the Attachment and Proliferation of Osteoblasts. Macromolecular Bioscience, 2010, 10, 1536-1543.	4.1	4
107	Influence of Topography on Adhesion and Bioadhesion. Advances in Polymer Science, 2018, , 19-50.	0.8	3
108	Bioâ€Nanocomposite Coatings: Multifunctional Bioâ€Nanocomposite Coatings for Perishable Fruits (Adv.) Tj ETQq0 0 0 rgBT /Overlock	21.0	3

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109	Stabilization of polyacrylonitrile fibers with carbon nanotubes. Polymer Degradation and Stability, 2021, 188, 109567.	5.8	3
110	Composition Gradient High-Throughput Polymer Libraries Enabled by Passive Mixing and Elevated Temperature Operability. Chemistry of Materials, 2022, 34, 6659-6670.	6.7	3
111	Attractive Nanocolloidâ^'Polymer Mixtures:Â Comparison of a Modified Perturbed Lennard-Jones Equation of State to Monte Carlo Simulation. Macromolecules, 2005, 38, 167-173.	4.8	2
112	Image Analysis for High-Throughput Materials Science. , 2003, , 33-56.		2
113	Guest editorial: Special review section on combinatorial and high-throughput polymer science. Journal of Materials Science, 2003, 38, 4425-4425.	3.7	1
114	Optimization of Microdomain Structure to Control Osteoblast Attachment on Poly(ethylene) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 542	0.5	1
115	Non-biomedical applications of materiomics. , 0, , 177-198.		0
116	Knowledge Discovery Applications in High-Throughput Polymer Characterization. Materials Research Society Symposia Proceedings, 2005, 894, 1.	0.1	0
117	Editorial on 2020 biomaterials special issue. Emergent Materials, 2020, 3, 427-428.	5.7	0