

J Carson Meredith

List of Publications by Year in descending order

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117
papers

5,121
citations

109264

35
h-index

95218

68
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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. <i>Biomaterials</i> , 2004, 25, 5735-5742.	5.7	686
2	Adsorption-Induced Conformational Changes in Fibronectin Due to Interactions with Well-Defined Surface Chemistries. <i>Langmuir</i> , 2003, 19, 8033-8040.	1.6	251
3	Combinatorial Materials Science for Polymer Thin-Film Dewetting. <i>Macromolecules</i> , 2000, 33, 9747-9756.	2.2	217
4	High-Throughput Measurement of Polymer Blend Phase Behavior. <i>Macromolecules</i> , 2000, 33, 5760-5762.	2.2	178
5	Mechanical and thermal properties of waterborne epoxy composites containing cellulose nanocrystals. <i>Polymer</i> , 2013, 54, 6589-6598.	1.8	175
6	Quantitative Equilibrium Constants between CO ₂ and Lewis Bases from FTIR Spectroscopy. <i>The Journal of Physical Chemistry</i> , 1996, 100, 10837-10848.	2.9	161
7	Combinatorial characterization of cell interactions with polymer surfaces. <i>Journal of Biomedical Materials Research - Part A</i> , 2003, 66A, 483-490.	2.1	151
8	Combinatorial Study of Surface Pattern Formation in Thin Block Copolymer Films. <i>Physical Review Letters</i> , 2001, 87, 015503.	2.9	112
9	LCST phase separation in biodegradable polymer blends: poly(D,L-lactide) and poly(μ -caprolactone). <i>Macromolecular Chemistry and Physics</i> , 2000, 201, 733-739.	1.1	109
10	Facile Preparation of Highly-Scattering Metal Nanoparticle-Coated Polymer Microbeads and Their Surface Plasmon Resonance. <i>Journal of the American Chemical Society</i> , 2009, 131, 5048-5049.	6.6	109
11	Site-Selective Modification of Cellulose Nanocrystals with Isophorone Diisocyanate and Formation of Polyurethane-CNC Composites. <i>ACS Applied Materials & Interfaces</i> , 2016, 8, 1458-1467.	4.0	108
12	High-Throughput Screening of Metal-Organic Frameworks for CO ₂ Separation. <i>ACS Combinatorial Science</i> , 2012, 14, 263-267.	3.8	106
13	Combinatorial Methods for Investigations in Polymer Materials Science. <i>MRS Bulletin</i> , 2002, 27, 330-335.	1.7	103
14	Spray-Coated Multilayer Cellulose Nanocrystal-Chitin Nanofiber Films for Barrier Applications. <i>ACS Sustainable Chemistry and Engineering</i> , 2018, 6, 10637-10644.	3.2	102
15	Multifunctional Bio-Nanocomposite Coatings for Perishable Fruits. <i>Advanced Materials</i> , 2020, 32, e1908291.	11.1	97
16	MOF stability and gas adsorption as a function of exposure to water, humid air, SO ₂ , and NO ₂ . <i>Microporous and Mesoporous Materials</i> , 2013, 173, 86-91.	2.2	94
17	Relationship between polymer chain conformation and phase boundaries in a supercritical fluid. <i>Journal of Chemical Physics</i> , 1997, 107, 10782-10792.	1.2	85
18	High-Throughput Discovery of Structure-Mechanical Property Relationships for Segmented Poly(urethane-urea)s. <i>Macromolecules</i> , 2004, 37, 2186-2195.	2.2	81

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19	Phase Diagram of a Nearly Isorefractive Polyolefin Blend. <i>Macromolecules</i> , 2002, 35, 1072-1078.	2.2	79
20	Assembly of Chitin Nanofibers into Porous Biomimetic Structures via Freeze Drying. <i>ACS Macro Letters</i> , 2014, 3, 185-190.	2.3	75
21	High-throughput characterization of pattern formation in symmetric diblock copolymer films. <i>Journal of Polymer Science, Part B: Polymer Physics</i> , 2001, 39, 2141-2158.	2.4	72
22	Facile Route to Produce Chitin Nanofibers as Precursors for Flexible and Transparent Gas Barrier Materials. <i>Biomacromolecules</i> , 2014, 15, 4614-4620.	2.6	70
23	Pollenkitt Wetting Mechanism Enables Species-Specific Tunable Pollen Adhesion. <i>Langmuir</i> , 2013, 29, 3012-3023.	1.6	69
24	Mechanical reinforcement and thermal properties of PVA tricomponent nanocomposites with chitin nanofibers and cellulose nanocrystals. <i>Composites Part A: Applied Science and Manufacturing</i> , 2019, 116, 147-157.	3.8	59
25	Chitin- and cellulose-based sustainable barrier materials: a review. <i>Emergent Materials</i> , 2020, 3, 919-936.	3.2	57
26	Combinatorial investigation of dewetting: polystyrene thin films on gradient hydrophilic surfaces. <i>Polymer</i> , 2003, 44, 769-772.	1.8	56
27	Theory of Polymer Adsorption and Colloid Stabilization in Supercritical Fluids. 2. Copolymer and End-Grafted Stabilizers. <i>Macromolecules</i> , 1998, 31, 5518-5528.	2.2	55
28	Highly Scattering, Surface-Enhanced Raman Scattering-Active, Metal Nanoparticle-Coated Polymers Prepared via Combined Swelling and Heteroaggregation. <i>Chemistry of Materials</i> , 2009, 21, 5654-5663.	3.2	55
29	Dye-labeled polystyrene latex microspheres prepared via a combined swelling-diffusion technique. <i>Journal of Colloid and Interface Science</i> , 2011, 363, 137-144.	5.0	49
30	Quantitative High-Throughput Screening of Osteoblast Attachment, Spreading, and Proliferation on Demixed Polymer Blend Micropatterns. <i>Biomacromolecules</i> , 2007, 8, 1907-1917.	2.6	44
31	Simulation of structure and interaction forces for surfaces coated with grafted chains in a compressible solvent. <i>Journal of Chemical Physics</i> , 1998, 109, 6424-6434.	1.2	41
32	Characterization of Ragweed Pollen Adhesion to Polyamides and Polystyrene Using Atomic Force Microscopy. <i>Environmental Science & Technology</i> , 2009, 43, 4308-4313.	4.6	41
33	Conversion of Pollen Particles into Three-Dimensional Ceramic Replicas Tailored for Multimodal Adhesion. <i>Chemistry of Materials</i> , 2013, 25, 4529-4536.	3.2	41
34	Interfacial Activity of Nonamphiphilic Particles in Fluid-Fluid Interfaces. <i>Langmuir</i> , 2017, 33, 4511-4519.	1.6	41
35	Effect of water absorption on pollen adhesion. <i>Journal of Colloid and Interface Science</i> , 2015, 442, 133-139.	5.0	38
36	Exploiting colloidal interfaces to increase dispersion, performance, and pot-life in cellulose nanocrystal/waterborne epoxy composites. <i>Polymer</i> , 2015, 68, 111-121.	1.8	38

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37	The use of temperature-composition combinatorial libraries to study the effects of biodegradable polymer blend surfaces on vascular cells. <i>Biomaterials</i> , 2005, 26, 4557-4567.	5.7	37
38	Capillary Foams: Stabilization and Functionalization of Porous Liquids and Solids. <i>Langmuir</i> , 2015, 31, 2669-2676.	1.6	37
39	High-Throughput Characterization of Novel PVDF/Acrylic Polyelectrolyte Semi-Interpenetrated Network Proton Exchange Membranes. <i>Macromolecules</i> , 2010, 43, 7625-7636.	2.2	36
40	Organization of Hybrid Dendrimer-Inorganic Nanoparticles on Amphiphilic Surfaces. <i>Macromolecules</i> , 2002, 35, 4852-4854.	2.2	35
41	High-throughput mechanical characterization of free-standing polymer films. <i>Review of Scientific Instruments</i> , 2005, 76, 062214.	0.6	35
42	Controlling Barrier and Mechanical Properties of Cellulose Nanocrystals by Blending with Chitin Nanofibers. <i>Biomacromolecules</i> , 2020, 21, 545-555.	2.6	35
43	Combinatorial methods for polymer materials science: Phase behavior of nanocomposite blend films. <i>Polymer Engineering and Science</i> , 2002, 42, 1836-1840.	1.5	34
44	Advances in combinatorial and high-throughput screening of biofunctional polymers for gene delivery, tissue engineering and anti-fouling coatings. <i>Journal of Materials Chemistry</i> , 2009, 19, 34-45.	6.7	32
45	Simulation of Interaction Forces between Nanoparticles: End-Grafted Polymer Modifiers. <i>Journal of Chemical Theory and Computation</i> , 2006, 2, 1624-1631.	2.3	30
46	Poly(ethylene oxide) bionanocomposites reinforced with chitin nanofiber networks. <i>Polymer</i> , 2016, 84, 267-274.	1.8	30
47	Theory of Polymer Adsorption and Colloid Stabilization in Supercritical Fluids. 1. Homopolymer Stabilizers. <i>Macromolecules</i> , 1998, 31, 5507-5517.	2.2	29
48	High-Throughput Screening of Mechanical Properties on Temperature-Gradient Polyurethaneurea Libraries. <i>Macromolecular Rapid Communications</i> , 2003, 24, 118-122.	2.0	28
49	Rheological behavior of highly loaded cellulose nanocrystal/poly(vinyl alcohol) composite suspensions. <i>Cellulose</i> , 2016, 23, 3001-3012.	2.4	28
50	Measuring the Influence of Solution Chemistry on the Adhesion of Au Nanoparticles to Mica Using Colloid Probe Atomic Force Microscopy. <i>Langmuir</i> , 2010, 26, 13995-14003.	1.6	27
51	Pollen fillers for reinforcing and strengthening of epoxy composites. <i>Emergent Materials</i> , 2018, 1, 95-103.	3.2	27
52	Measurement of polyamide and polystyrene adhesion with coated-tip atomic force microscopy. <i>Journal of Colloid and Interface Science</i> , 2007, 314, 52-62.	5.0	23
53	Bubble Meets Droplet: Particle-Assisted Reconfiguration of Wetting Morphologies in Colloidal Multiphase Systems. <i>Small</i> , 2016, 12, 3309-3319.	5.2	23
54	Stabilization of Liquid Foams through the Synergistic Action of Particles and an Immiscible Liquid. <i>Angewandte Chemie - International Edition</i> , 2014, 53, 13385-13389.	7.2	21

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55	Cloud condensation nuclei activity of six pollenkitts and the influence of their surface activity. <i>Atmospheric Chemistry and Physics</i> , 2019, 19, 4741-4761.	1.9	21
56	Role of Lewis Basicity and van der Waals Forces in Adhesion of Silica MFI Zeolites (010) with Polyimides. <i>Langmuir</i> , 2009, 25, 9101-9107.	1.6	20
57	Adhesion Enhancements and Surface-Enhanced Raman Scattering Activity of Ag and Ag@SiO ₂ Nanoparticle Decorated Ragweed Pollen Microparticle Sensor. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 24804-24811.	4.0	20
58	Humidity-tolerant rate-dependent capillary viscous adhesion of bee-collected pollen fluids. <i>Nature Communications</i> , 2019, 10, 1379.	5.8	20
59	Simulation of Interaction Forces between Nanoparticles in the Presence of Lennard-Jones Polymers: Freely Adsorbing Homopolymer Modifiers. <i>Langmuir</i> , 2005, 21, 487-497.	1.6	19
60	High-throughput dynamic impact characterization of polymer films. <i>Materials Research Innovations</i> , 2003, 7, 295-301.	1.0	18
61	Combinatorial screening of organic electronic materials: thin film stability. <i>Measurement Science and Technology</i> , 2005, 16, 128-136.	1.4	18
62	Quantification of E. coli adhesion to polyamides and polystyrene with atomic force microscopy. <i>Colloids and Surfaces B: Biointerfaces</i> , 2008, 65, 308-312.	2.5	18
63	Surface treated pollen performance as a renewable reinforcing filler for poly(vinyl acetate). <i>Journal of Materials Chemistry A</i> , 2014, 2, 17031-17040.	5.2	18
64	Pressure sensitive microparticle adhesion through biomimicry of the pollen-stigma interaction. <i>Soft Matter</i> , 2016, 12, 2965-2975.	1.2	18
65	The atypically high modulus of pollen exine. <i>Journal of the Royal Society Interface</i> , 2018, 15, 20180533.	1.5	18
66	Three-dimensional magnetite replicas of pollen particles with tailorable and predictable multimodal adhesion. <i>Journal of Materials Chemistry C</i> , 2015, 3, 632-643.	2.7	17
67	Density Dependence of Homopolymer Adsorption and Colloidal Interaction Forces in a Supercritical Solvent: A Monte Carlo Simulation. <i>Langmuir</i> , 1999, 15, 8037-8044.	1.6	16
68	Surface Structure Patterning for Fabricating Non-fluorinated Superhydrophobic Cellulosic Membranes. <i>ACS Applied Polymer Materials</i> , 2019, 1, 1220-1229.	2.0	16
69	The Solution is the Solution: Data-Driven Elucidation of Solution-to-Device Feature Transfer for Γ -Conjugated Polymer Semiconductors. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 3613-3620.	4.0	16
70	High-throughput screening of ionic conductivity in polymer membranes. <i>Electrochimica Acta</i> , 2009, 54, 3899-3909.	2.6	15
71	The dynamics of rising oil-coated bubbles: experiments and simulations. <i>Soft Matter</i> , 2018, 14, 2724-2734.	1.2	15
72	Simulation of nanocolloid chemical potentials in a hard-sphere polymer solution: Expanded ensemble Monte Carlo. <i>Journal of Chemical Physics</i> , 2002, 117, 5443-5451.	1.2	14

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73	Instability and Dewetting of Conducting-Insulating Polymer Thin-Film Bilayers. <i>Macromolecular Rapid Communications</i> , 2004, 25, 275-279.	2.0	14
74	Osmotic pressure and chemical potential of silica nanoparticles in aqueous poly(ethyleneoxide) solution. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 2008, 317, 129-135.	2.3	14
75	Effect of nanowhisiker-modified zeolites on mechanical and thermal properties of poly(vinyl acetate) composites with pure-silica MFI. <i>Polymer</i> , 2010, 51, 5744-5755.	1.8	14
76	Non-DLVO Silica Interaction Forces in NMP-Water Mixtures. I. A Symmetric System. <i>Langmuir</i> , 2011, 27, 6897-6904.	1.6	14
77	Enabling zero added-coalescent waterborne acrylic coatings with cellulose nanocrystals. <i>Progress in Organic Coatings</i> , 2021, 150, 105969.	1.9	14
78	Non-DLVO Silica Interaction Forces in NMP-Water Mixtures. II. An Asymmetric System. <i>Langmuir</i> , 2011, 27, 10000-10006.	1.6	13
79	Capillary Foams: Formation Stages and Effects of System Parameters. <i>Industrial & Engineering Chemistry Research</i> , 2017, 56, 9533-9540.	1.8	13
80	Small Data Machine Learning: Classification and Prediction of Poly(ethylene terephthalate) Stabilizers Using Molecular Descriptors. <i>ACS Applied Polymer Materials</i> , 2020, 2, 5592-5601.	2.0	13
81	Minimizing Oxygen Permeability in Chitin/Cellulose Nanomaterial Coatings by Tuning Chitin Deacetylation. <i>ACS Sustainable Chemistry and Engineering</i> , 2022, 10, 124-133.	3.2	13
82	Pollen: A Novel, Biorenewable Filler for Polymer Composites. <i>Macromolecular Materials and Engineering</i> , 2011, 296, 1055-1062.	1.7	11
83	Bioenabled Core/Shell Microparticles with Tailored Multimodal Adhesion and Optical Reflectivity. <i>Chemistry of Materials</i> , 2015, 27, 7321-7330.	3.2	11
84	Rheology of capillary foams. <i>Soft Matter</i> , 2020, 16, 6725-6732.	1.2	11
85	Photostability of Ambient-Processed, Conjugated Polymer Electrochromic Devices Encapsulated by Bionderived Barrier Films. <i>ACS Sustainable Chemistry and Engineering</i> , 2021, 9, 2937-2945.	3.2	11
86	Spectroscopy: the fourth vertex on the molecular thermodynamics tetrahedron. <i>Fluid Phase Equilibria</i> , 1996, 116, 385-394.	1.4	10
87	Nanoscale Colloids in a Freely Adsorbing Polymer Solution: A Monte Carlo Simulation Study. <i>Langmuir</i> , 2004, 20, 1501-1510.	1.6	10
88	Tunable multimodal adhesion of 3D, nanocrystalline CoFe ₂ O ₄ pollen replicas. <i>Bioinspiration and Biomimetics</i> , 2017, 12, 066009.	1.5	10
89	Synergistic Reinforcement of Composite Hydrogels with Nanofiber Mixtures of Cellulose Nanocrystals and Chitin Nanofibers. <i>Biomacromolecules</i> , 2021, 22, 340-352.	2.6	10
90	Increasing efficiency of the homogenization process for production of chitin nanofibers for barrier film applications. <i>Carbohydrate Polymers</i> , 2021, 274, 118658.	5.1	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.	1.6	9
92	Composite proton exchange membranes from zirconium-based solid acids and PVDF/acrylic polyelectrolyte blends. Journal of Applied Polymer Science, 2012, 124, E241.	1.3	8
93	Osteoblast Adhesion and Proliferation on Poly(3- ϵ -octylthiophene) Thin Films. Macromolecular Bioscience, 2010, 10, 258-264.	2.1	7
94	Morphological Factors Involved in Adhesion of Acid-Cleaned Diatom Silica. Silicon, 2014, 6, 95-107.	1.8	7
95	High Throughput Screening of Mechanical Properties and Scratch Resistance of Tricomponent Polyurethane Coatings. ACS Applied Polymer Materials, 2019, 1, 3064-3073.	2.0	7
96	Continuous stabilization of polyacrylonitrile (PAN) - carbon nanotube (CNT) fibers by Joule heating. Chemical Engineering Science, 2021, 236, 116495.	1.9	7
97	Encapsulation of cellulose nanocrystals into acrylic latex particles via miniemulsion polymerization. Polymer, 2022, 240, 124488.	1.8	7
98	Local cell metrics: a novel method for analysis of cell-cell interactions. BMC Bioinformatics, 2009, 10, 350.	1.2	6
99	Local Histogram Analysis: Detecting Cell-Microstructure Interactions on Combinatorial Biomaterial Libraries. Combinatorial Chemistry and High Throughput Screening, 2009, 12, 626-633.	0.6	6
100	Spatially Resolved Solid-State ¹ H 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.	0.1	5
102	Structure-Property Relationship in Capillary Foams. Langmuir, 2021, 37, 10510-10520.	1.6	5
103	Acryloyl-modified cellulose nanocrystals: effects of substitution on crystallinity and copolymerization with acrylic monomers. Cellulose, 2021, 28, 10875-10889.	2.4	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.	1.5	4
106	Effect of Poly(3- ϵ -octylthiophene) Doping on the Attachment and Proliferation of Osteoblasts. Macromolecular Bioscience, 2010, 10, 1536-1543.	2.1	4
107	Influence of Topography on Adhesion and Bioadhesion. Advances in Polymer Science, 2018, , 19-50.	0.4	3
108	Bio-Nanocomposite Coatings: Multifunctional Bio-Nanocomposite Coatings for Perishable Fruits (Adv.) Tj ETQq0,0,0 rgBT ₃ /Overlock	11.1	3

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109	Stabilization of polyacrylonitrile fibers with carbon nanotubes. <i>Polymer Degradation and Stability</i> , 2021, 188, 109567.	2.7	3
110	Composition Gradient High-Throughput Polymer Libraries Enabled by Passive Mixing and Elevated Temperature Operability. <i>Chemistry of Materials</i> , 2022, 34, 6659-6670.	3.2	3
111	Attractive Nanocolloid~Polymer Mixtures:~A Comparison of a Modified Perturbed Lennard-Jones Equation of State to Monte Carlo Simulation. <i>Macromolecules</i> , 2005, 38, 167-173.	2.2	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. <i>Journal of Materials Science</i> , 2003, 38, 4425-4425.	1.7	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. <i>Materials Research Society Symposia Proceedings</i> , 2005, 894, 1.	0.1	0
117	Editorial on 2020 biomaterials special issue. <i>Emergent Materials</i> , 2020, 3, 427-428.	3.2	0