Brett A Helms

List of Publications by Year in Descending Order

92 papers	5,296 citations	39 h-index	72 g-index
105 ext. papers	6,145 ext. citations	12.8 avg, IF	5.92 L-index

#	Paper	IF	Citations
92	Lower-Cost, Lower-Carbon Production of Circular Polydiketoenamine Plastics. *ACS Sustainable Chemistry and Engineering*, **2022**, 10, 2740-2749	8.3	0
91	Functionalized Phosphonium Cations Enable Zinc Metal Reversibility in Aqueous Electrolytes. *Angewandte Chemie - International Edition*, **2021**, 60, 12438-12445	16.4	23
90	Leveling the cost and carbon footprint of circular polymers that are chemically recycled to monomer. *Science Advances*, **2021**, 7,	14.3	17
89	Functionalized Phosphonium Cations Enable Zinc Metal Reversibility in Aqueous Electrolytes. *Angewandte Chemie*, **2021**, 133, 12546-12553	3.6	1
88	Diversity-oriented synthesis of polymer membranes with ion solvation cages. *Nature*, **2021**, 592, 225-231	50.4	24
87	Revealing Charge-Transfer Dynamics at Electrified Sulfur Cathodes Using Constrained Density Functional Theory. *Journal of Physical Chemistry Letters*, **2021**, 12, 739-744	6.4	1
86	Toward polymer upcycling-adding value and tackling circularity. *Science*, **2021**, 373, 66-69	33.3	61
85	The Buckling Spectra of Nanoparticle Surfactant Assemblies. *Nano Letters*, **2021**, 21, 7116-7122	11.5	1
84	Hanging droplets from liquid surfaces. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 8360-8365	11.5	13
83	Universal chemomechanical design rules for solid-ion conductors to prevent dendrite formation in lithium metal batteries. *Nature Materials*, **2020**, 19, 758-766	27	62
82	Conformational Entropy as a Means to Control the Behavior of Poly(diketoenamine) Vitrimers In and Out of Equilibrium. *Angewandte Chemie*, **2020**, 132, 745-749	3.6	3
81	Conformational Entropy as a Means to Control the Behavior of Poly(diketoenamine) Vitrimers In and Out of Equilibrium. *Angewandte Chemie - International Edition*, **2020**, 59, 735-739	16.4	30
80	Aqueous Processing and Spray Deposition of Polymer-Wrapped Tin-Doped Indium Oxide Nanocrystals as Electrochromic Thin Films. *Chemistry of Materials*, **2020**, 32, 8401-8411	9.6	7
79	Direct observation of nanoparticle-surfactant assembly and jamming at the water-oil interface. *Science Advances*, **2020**, 6,	14.3	13
78	Interfacial Speciation Determines Interfacial Chemistry: X-ray-Induced Lithium Fluoride Formation from Water-in-salt Electrolytes on Solid Surfaces. *Angewandte Chemie - International Edition*, **2020**, 59, 23180-23187	16.4	12
77	Interfacial Speciation Determines Interfacial Chemistry: X-ray-Induced Lithium Fluoride Formation from Water-in-salt Electrolytes on Solid Surfaces. *Angewandte Chemie*, **2020**, 132, 23380-23387	3.6	6
76	Spontaneous emulsification induced by nanoparticle surfactants. *Journal of Chemical Physics*, **2020**, 153, 224705	3.9	4

75	Nanoporous Polymer Films with a High Cation Transference Number Stabilize Lithium Metal Anodes in Light-Weight Batteries for Electrified Transportation. *Nano Letters*, **2019**, 19, 1387-1394	11.5	42
74	Organic Nanotube with Subnanometer, pH-Responsive Lumen. *Journal of the American Chemical Society*, **2019**, 141, 10953-10957	16.4	13
73	Closed-loop recycling of plastics enabled by dynamic covalent diketoenamine bonds. *Nature Chemistry*, **2019**, 11, 442-448	17.6	208
72	Harnessing liquid-in-liquid printing and micropatterned substrates to fabricate 3-dimensional all-liquid fluidic devices. *Nature Communications*, **2019**, 10, 1095	17.4	55
71	Poly(oxime-ester) Vitrimers with Catalyst-Free Bond Exchange. *Journal of the American Chemical Society*, **2019**, 141, 13753-13757	16.4	80
70	Reconfigurable ferromagnetic liquid droplets. *Science*, **2019**, 365, 264-267	33.3	188
69	Sculpting Liquids with Two-Dimensional Materials: The Assembly of TiCT MXene Sheets at Liquid-Liquid Interfaces. *ACS Nano*, **2019**, 13, 12385-12392	16.7	30
68	Reconfigurable Microfluidic Droplets Stabilized by Nanoparticle Surfactants. *ACS Nano*, **2018**, 12, 2365-2372	16.2	40
67	Effect of the Backbone Tether on the Electrochemical Properties of Soluble Cyclopropenium Redox-Active Polymers. *Macromolecules*, **2018**, 51, 3539-3546	5.5	26
66	Thermally Rearranged Polymer Membranes Containing Tröger's Base Units Have Exceptional Performance for Air Separations. *Angewandte Chemie - International Edition*, **2018**, 57, 4912-4916	16.4	30
65	High-Performance Oligomeric Catholytes for Effective Macromolecular Separation in Nonaqueous Redox Flow Batteries. *ACS Central Science*, **2018**, 4, 189-196	16.8	82
64	Thermally Rearranged Polymer Membranes Containing Tröger's Base Units Have Exceptional Performance for Air Separations. *Angewandte Chemie*, **2018**, 130, 5006-5010	3.6	2
63	Aqueous-Processable Redox-Active Supramolecular Polymer Binders for Advanced Lithium/Sulfur Cells. *Chemistry of Materials*, **2018**, 30, 685-691	9.6	33
62	Engineered Transport in Microporous Materials and Membranes for Clean Energy Technologies. *Advanced Materials*, **2018**, 30, 1704953	24	67
61	Rücktitelbild: Thermally Rearranged Polymer Membranes Containing Tröger's Base Units Have Exceptional Performance for Air Separations (Angew. Chem. 18/2018). *Angewandte Chemie*, **2018**, 130, 5274-5274	3.6	
60	Guiding kinetic trajectories between jammed and unjammed states in 2D colloidal nanocrystal-polymer assemblies with zwitterionic ligands. *Science Advances*, **2018**, 4, eaap8045	14.3	18
59	Architected Macroporous Polyelectrolytes That Suppress Dendrite Formation during High-Rate Lithium Metal Electrodeposition. *Macromolecules*, **2018**, 51, 7666-7671	5.5	8
58	Enhancement of CO binding and mechanical properties upon diamine functionalization of M(dobpdc) metal-organic frameworks. *Chemical Science*, **2018**, 9, 5197-5206	9.4	28

57	Designing Redox-Active Oligomers for Crossover-Free, Nonaqueous Redox-Flow Batteries with High Volumetric Energy Density. *Chemistry of Materials*, **2018**, 30, 3861-3866	9.6	33
56	Macromolecular Design Strategies for Preventing Active-Material Crossover in Non-Aqueous All-Organic Redox-Flow Batteries. *Angewandte Chemie - International Edition*, **2017**, 56, 1595-1599	16.4	84
55	Macromolecular Design Strategies for Preventing Active-Material Crossover in Non-Aqueous All-Organic Redox-Flow Batteries. *Angewandte Chemie*, **2017**, 129, 1617-1621	3.6	15
54	Nearest-neighbour nanocrystal bonding dictates framework stability or collapse in colloidal nanocrystal frameworks. *Chemical Communications*, **2017**, 53, 4853-4856	5.8	5
53	Materials Genomics Screens for Adaptive Ion Transport Behavior by Redox-Switchable Microporous Polymer Membranes in Lithium-Sulfur Batteries. *ACS Central Science*, **2017**, 3, 399-406	16.8	38
52	Effect of Nanoparticle Surfactants on the Breakup of Free-Falling Water Jets during Continuous Processing of Reconfigurable Structured Liquid Droplets. *Nano Letters*, **2017**, 17, 3119-3125	11.5	33
51	Bicontinuous structured liquids with sub-micrometre domains using nanoparticle surfactants. *Nature Nanotechnology*, **2017**, 12, 1060-1063	28.7	94
50	Diamine-Appended Mg(dobpdc) Nanorods as Phase-Change Fillers in Mixed-Matrix Membranes for Efficient CO/N Separations. *Nano Letters*, **2017**, 17, 6828-6832	11.5	22
49	Self-Regulated Nanoparticle Assembly at Liquid/Liquid Interfaces: A Route to Adaptive Structuring of Liquids. *Langmuir*, **2017**, 33, 7994-8001	4	38
48	Molecular understanding of polyelectrolyte binders that actively regulate ion transport in sulfur cathodes. *Nature Communications*, **2017**, 8, 2277	17.4	100
47	Understanding and controlling the chemical evolution and polysulfide-blocking ability of lithium–sulfur battery membranes cast from polymers of intrinsic microporosity. *Journal of Materials Chemistry A*, **2016**, 4, 16946-16952	13	36
46	Structured Liquids with pH-Triggered Reconfigurability. *Advanced Materials*, **2016**, 28, 6612-8	24	61
45	Reaction: Polymer Chemistries Enabling Cradle-to-Cradle Life Cycles for Plastics. *CheM*, **2016**, 1, 816-818	16.2	24
44	Chemical doping enhances electronic transport in networks of hexabenzocoronenes assembled in non-aqueous electrolyte. *Polymer Chemistry*, **2015**, 6, 5560-5564	4.9	2
43	Nanocomposite Architecture for Rapid, Spectrally-Selective Electrochromic Modulation of Solar Transmittance. *Nano Letters*, **2015**, 15, 5574-9	11.5	143
42	Colloidal Nanocrystal Frameworks. *Advanced Materials*, **2015**, 27, 5820-9	24	17
41	Block Copolymer Packing Limits and Interfacial Reconfigurability in the Assembly of Periodic Mesoporous Organosilicas. *Advanced Functional Materials*, **2015**, 25, 4120-4128	15.6	16
40	Dispersible Plasmonic Doped Metal Oxide Nanocrystal Sensors that Optically Track Redox Reactions in Aqueous Media with Single-Electron Sensitivity. *Advanced Optical Materials*, **2015**, 3, 1293-1300	8.1	24

39	Chemically directing d-block heterometallics to nanocrystal surfaces as molecular beacons of surface structure. *Chemical Science*, **2015**, 6, 6295-6304	9.4	1
38	Synthetic control over the dynamics of mesoscaled cargo release from colloidal polymer vectors inside live cells. *Journal of Polymer Science Part A*, **2015**, 53, 256-264	2.5	
37	Synthesis of pyridine chitosan and its protonic conductivity. *Journal of Polymer Science Part A*, **2015**, 53, 211-214	2.5	17
36	Influence of Surface Composition on Electronic Transport through Naked Nanocrystal Networks. *Chemistry of Materials*, **2014**, 26, 2214-2217	9.6	14
35	Mechanistic insight into the formation of cationic naked nanocrystals generated under equilibrium control. *Journal of the American Chemical Society*, **2014**, 136, 15702-10	16.4	46
34	NIR-Selective electrochromic heteromaterial frameworks: a platform to understand mesoscale transport phenomena in solid-state electrochemical devices. *Journal of Materials Chemistry C*, **2014**, 2, 3328	7.1	45
33	Constructing functional mesostructured materials from colloidal nanocrystal building blocks. *Accounts of Chemical Research*, **2014**, 47, 236-46	24.3	46
32	U.S. energy savings potential from dynamic daylighting control glazings. *Energy and Buildings*, **2013**, 66, 415-423	7	39
31	Nanoporous semiconductors synthesized through polymer templating of ligand-stripped CdSe nanocrystals. *Advanced Materials*, **2013**, 25, 1315-22	24	25
30	Evolution of ordered metal chalcogenide architectures through chemical transformations. *Journal of the American Chemical Society*, **2013**, 135, 7446-9	16.4	27
29	Exceptionally mild reactive stripping of native ligands from nanocrystal surfaces by using Meerwein's salt. *Angewandte Chemie - International Edition*, **2012**, 51, 684-9	16.4	211
28	Delivery of custom-purposed colloidal nanocrystals to cancer cells. *Therapeutic Delivery*, **2012**, 3, 1041-5	3.8	
27	Assembly of ligand-stripped nanocrystals into precisely controlled mesoporous architectures. *Nano Letters*, **2012**, 12, 3872-7	11.5	81
26	Synthetic development of cell-permeable polymer colloids decorated with nanocrystal imaging probes optimized for cell tracking. *Chemical Science*, **2012**, 3, 2246	9.4	7
25	Efficient polymer passivation of ligand-stripped nanocrystal surfaces. *Journal of Polymer Science Part A*, **2012**, 50, 3719-3727	2.5	16
24	Stealth rare earth oxide nanodiscs for magnetic resonance imaging. *Advanced Healthcare Materials*, **2012**, 1, 437-42	10.1	12
23	Exceptionally Mild Reactive Stripping of Native Ligands from Nanocrystal Surfaces by Using Meerwein's Salt. *Angewandte Chemie*, **2012**, 124, 708-713	3.6	15
22	Dual-emitting quantum dot/quantum rod-based nanothermometers with enhanced response and sensitivity in live cells. *Journal of the American Chemical Society*, **2012**, 134, 9565-8	16.4	154

21	Processable cyclic peptide nanotubes with tunable interiors. *Journal of the American Chemical Society*, **2011**, 133, 15296-9	16.4	111
20	Subnanometer porous thin films by the co-assembly of nanotube subunits and block copolymers. *ACS Nano*, **2011**, 5, 1376-84	16.7	95
19	From phage display to dendrimer display: insights into multivalent binding. *Journal of the American Chemical Society*, **2011**, 133, 6636-41	16.4	32
18	Tunable infrared absorption and visible transparency of colloidal aluminum-doped zinc oxide nanocrystals. *Nano Letters*, **2011**, 11, 4706-10	11.5	396
17	Polyoxometalates and colloidal nanocrystals as building blocks for metal oxide nanocomposite films. *Journal of Materials Chemistry*, **2011**, 21, 11631		63
16	Collagen targeting using multivalent protein-functionalized dendrimers. *Bioorganic and Medicinal Chemistry*, **2011**, 19, 1062-71	3.4	12
15	Sub-10 nm nanofabrication via nanoimprint directed self-assembly of block copolymers. *ACS Nano*, **2011**, 5, 8523-31	16.7	109
14	Interface segregating fluoralkyl-modified polymers for high-fidelity block copolymer nanoimprint lithography. *Journal of the American Chemical Society*, **2011**, 133, 2812-5	16.4	40
13	Rapid cytosolic delivery of luminescent nanocrystals in live cells with endosome-disrupting polymer colloids. *Nano Letters*, **2010**, 10, 4086-92	11.5	57
12	A Versatile, Modular Platform for Multivalent Peptide Ligands Based on a Dendritic Wedge. *European Journal of Organic Chemistry*, **2010**, 2010, 111-119	3.2	14
11	Efficient and chemoselective surface immobilization of proteins by using aniline-catalyzed oxime chemistry. *ChemBioChem*, **2009**, 10, 658-62	3.8	45
10	High-affinity peptide-based collagen targeting using synthetic phage mimics: from phage display to dendrimer display. *Journal of the American Chemical Society*, **2009**, 131, 11683-5	16.4	65
9	Iron complexes of dendrimer-appended carboxylates for activating dioxygen and oxidizing hydrocarbons. *Journal of the American Chemical Society*, **2008**, 130, 4352-63	16.4	66
8	Site-specific protein and peptide immobilization on a biosensor surface by pulsed native chemical ligation. *ChemBioChem*, **2007**, 8, 1790-4	3.8	39
7	A versatile new monomer family: functionalized 4-vinyl-1,2,3-triazoles via click chemistry. *Journal of the American Chemical Society*, **2006**, 128, 12084-5	16.4	149
6	Chemistry. Dendrimers at work. *Science*, **2006**, 313, 929-30	33.3	188
5	Effects of Polymer Architecture and Nanoenvironment in Acylation Reactions Employing Dendritic (Dialkylamino)pyridine Catalysts. *Macromolecules*, **2005**, 38, 5411-5415	5.5	83
4	One-pot reaction cascades using star polymers with core-confined catalysts. *Angewandte Chemie - International Edition*, **2005**, 44, 6384-7	16.4	251

3	Dendronized linear polymers via "click chemistry". *Journal of the American Chemical Society*, **2004**, 126, 15020-1	16.4	545
2	The effect of macromolecular architecture in nanomaterials: a comparison of site isolation in porphyrin core dendrimers and their isomeric linear analogues. *Journal of the American Chemical Society*, **2002**, 124, 3926-38	16.4	133
1	A practical approach to the living polymerization of functionalized monomers: application to block copolymers and 3-dimensional macromolecular architectures. *Macromolecular Symposia*, **2001**, 174, 85-92	0.8	24