Keith A Brown

List of Publications by Year
in descending order

89 papers	3,267 citations	147566 31 h-index	161609 54 g-index
91 all docs	91 docs citations	91 times ranked	4724 citing authors

#	Article	IF	Citations
1	Electric field induced macroscopic cellular phase of nanoparticles. Soft Matter, 2022, 18, 1991-1996.	1.2	2
2	Data-Driven Design and Autonomous Experimentation in Soft and Biological Materials Engineering. Annual Review of Chemical and Biomolecular Engineering, 2022, 13, 25-44.	3.3	13
3	MODEL, GUESS, CHECK: Wordle as a primer on active learning for materials research. Npj Computational Materials, 2022, 8, .	3.5	9
4	Chemically-adhesive particles form stronger and stiffer magnetorheological fluids. Smart Materials and Structures, 2022, 31, 077001.	1.8	0
5	Theory for hierarchical assembly with dielectrophoresis and the role of particle anisotropy. Electrophoresis, 2021, 42, 635-643.	1.3	4
6	Massively parallel cantilever-free atomic force microscopy. Nature Communications, 2021, 12, 393.	5.8	17
7	Reinforcing Magnetorheological Fluids with Highly Anisotropic 2D Materials. ChemPhysChem, 2021, 22, 435-440.	1.0	6
8	Closed-Loop Nanopatterning of Liquids with Dip-Pen Nanolithography. ACS Applied Materials & Interfaces, 2021, 13, 14710-14717.	4.0	12
9	Reinforcing Magnetorheological Fluids with Highly Anisotropic 2D Materials. ChemPhysChem, 2021, 22, 432-432.	1.0	0
10	Using simulation to accelerate autonomous experimentation: A case study using mechanics. IScience, 2021, 24, 102262.	1.9	35
11	Increasing Throughput in Fused Deposition Modeling by Modulating Bed Temperature. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2021, 143, .	1.3	6
12	Autonomous experimentation systems for materials development: A community perspective. Matter, 2021, 4, 2702-2726.	5.0	143
13	Designing Composites with Target Effective Youngâ€™s Modulus using Reinforcement Learning. , 2021, , .		4
14	Benchmarking the performance of Bayesian optimization across multiple experimental materials science domains. Npj Computational Materials, 2021, 7, .	3.5	62
15	Dimensions of Smart Additive Manufacturing. Advanced Intelligent Systems, 2021, 3, .	3.3	4
16	Machine Learning in Nanoscience: Big Data at Small Scales. Nano Letters, 2020, 20, 2-10.	4.5	138
17	Physiologically Relevant Mechanics of Biodegradable Polyester Nanoparticles. Nano Letters, 2020, 20, 7536-7542.	4.5	11
18	Stiffness of HIVâ€1 Mimicking Polymer Nanoparticles Modulates Gangliosideâ€Mediated Cellular Uptake and Trafficking. Advanced Science, 2020, 7, 2000649.	5.6	26

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19	Magnetorheological Fluidâ€Based Flow Control for Soft Robots. Advanced Intelligent Systems, 2020, 2, 2000139.	3.3	20
20	Magnetorheological Fluidâ€Based Flow Control for Soft Robots. Advanced Intelligent Systems, 2020, 2, 2070107.	3.3	2
21	High-Throughput Multiobjective Optimization of Patterned Multifunctional Surfaces. ACS Applied Materials & Interfaces, 2020, 12, 32069-32077.	4.0	2
22	Shear thickening prevents slip in magnetorheological fluids. Smart Materials and Structures, 2020, 29, 07LT02.	1.8	11
23	A Bayesian experimental autonomous researcher for mechanical design. Science Advances, 2020, 6, eaaz1708.	4.7	127
24	Dielectrophoresis of air. Applied Physics Letters, 2020, 116, 084101.	1.5	4
25	High-resolution measurement of atomic force microscope cantilever resonance frequency. Review of Scientific Instruments, 2020, 91, 123705.	0.6	3
26	Measuring Nanoparticle Polarizability Using Fluorescence Microscopy. Nano Letters, 2019, 19, 5762-5768.	4.5	18
27	Failure of Particle-Laden Interfaces Studied Using The Funnel Method. Colloids and Interface Science Communications, 2019, 28, 54-59.	2.0	7
28	Design of Elastomer-CNT Film Photoactuators for Nanolithography. Polymers, 2019, 11, 314.	2.0	8
29	A stepped-sine curve-fit algorithm for finding cantilever resonance shifts in AFM. , 2019, , .		2
30	Nanocombinatorics with Cantilever-Free Scanning Probe Arrays. ACS Nano, 2019, 13, 8-17.	7.3	29
31	Catalyst discovery through megalibraries of nanomaterials. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 40-45.	3.3	77
32	Design and Realization of 3D Printed AFM Probes. Small, 2018, 14, e1800162.	5.2	25
33	Building superlattices from individual nanoparticles via template-confined DNA-mediated assembly. Science, 2018, 359, 669-672.	6.0	195
34	Photoactuated Pens for Molecular Printing. Advanced Materials, 2018, 30, 1705303.	11.1	27
35	Confinement-Induced Stiffening of Elastomer Thin Films. Journal of Physical Chemistry B, 2018, 122, 10767-10773.	1.2	12
36	Patterning Porosity in Hydrogels by Arresting Phase Separation. ACS Applied Materials & Interfaces, 2018, 10, 34604-34610.	4.0	10

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37	Polymer nanomechanics: Separating the size effect from the substrate effect in nanoindentation. Applied Physics Letters, 2017, 110, .	1.5	19
38	Quantifying Liquid Transport and Patterning Using Atomic Force Microscopy. Langmuir, 2017, 33, 5173-5178.	1.6	17
39	Elasticity and failure of liquid marbles: influence of particle coating and marble volume. Soft Matter, 2017, 13, 8903-8909.	1.2	29
40	Progress in Top-Down Control of Bottom-Up Assembly. Nano Letters, 2017, 17, 6508-6510.	4.5	81
41	The Significance of Multivalent Bonding Motifs and â€œBond Orderâ€•in DNA-Directed Nanoparticle Crystallization. Journal of the American Chemical Society, 2016, 138, 6119-6122.	6.6	22
42	Giant conductivity switching of LaAlO3/SrTiO3 heterointerfaces governed by surface protonation. Nature Communications, 2016, 7, 10681.	5.8	68
43	Liquid-Phase Beam Pen Lithography. Small, 2016, 12, 988-993.	5.2	15
44	Critical Undercooling in DNA-Mediated Nanoparticle Crystallization. ACS Nano, 2016, 10, 1363-1368.	7.3	19
45	Hard Transparent Arrays for Polymer Pen Lithography. ACS Nano, 2016, 10, 3144-3148.	7.3	27
46	Modulating the Bond Strength of DNAâ€“Nanoparticle Superlattices. ACS Nano, 2016, 10, 1771-1779.	7.3	36
47	Strong Coupling between Plasmonic Gap Modes and Photonic Lattice Modes in DNA-Assembled Gold Nanocube Arrays. Nano Letters, 2015, 15, 4699-4703.	4.5	128
48	Apertureless Cantilever-Free Pen Arrays for Scanning Photochemical Printing. Small, 2015, 11, 913-918.	5.2	39
49	Tip-Directed Synthesis of Multimetallic Nanoparticles. Journal of the American Chemical Society, 2015, 137, 9167-9173.	6.6	136
50	Nested-Batch-Mode Learning and Stochastic Optimization with An Application to Sequential MultiStage Testing in Materials Science. SIAM Journal of Scientific Computing, 2015, 37, B361-B381.	1.3	21
51	Modular and Chemically Responsive Oligonucleotide â€œBondsâ€•in Nanoparticle Superlattices. Journal of the American Chemical Society, 2015, 137, 13566-13571.	6.6	23
52	High-Throughput, Algorithmic Determination of Nanoparticle Structure from Electron Microscopy Images. ACS Nano, 2015, 9, 12488-12495.	7.3	58
53	Fabrication of Coaxial and Triaxial Atomic Force Microscope Imaging Probes. Materials Research Society Symposia Proceedings, 2014, 1712, 13.	0.1	0
54	Material transport in dip-pen nanolithography. Frontiers of Physics, 2014, 9, 385-397.	2.4	60

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55	Shape-Selective Deposition and Assembly of Anisotropic Nanoparticles. Nano Letters, 2014, 14, 2157-2161.	4.5	101
56	Combinatorial Screening of Mesenchymal Stem Cell Adhesion and Differentiation Using Polymer Pen Lithography. Methods in Cell Biology, 2014, 119, 261-276.	0.5	14
57	Combined Chemical and Physical Encoding with Silk Fibroinâ€Embedded Nanostructures. Small, 2014, 10, 1485-1489.	5.2	9
58	Capillary bridge rupture in dip-pen nanolithography. Soft Matter, 2014, 10, 5603-5608.	1.2	33
59	Beam pen lithography as a new tool for spatially controlled photochemistry, and its utilization in the synthesis of multivalent glycan arrays. Chemical Science, 2014, 5, 2023.	3.7	65
60	Importance of the DNA â€œbondâ€•in programmable nanoparticle crystallization. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 14995-15000.	3.3	55
61	Universal Noble Metal Nanoparticle Seeds Realized Through Iterative Reductive Growth and Oxidative Dissolution Reactions. Journal of the American Chemical Society, 2014, 136, 7603-7606.	6.6	200
62	Langmuir Analysis of Nanoparticle Polyvalency in DNAâ€Mediated Adsorption. Angewandte Chemie - International Edition, 2014, 53, 9532-9538.	7.2	36
63	Oligonucleotide Flexibility Dictates Crystal Quality in DNAâ€Programmable Nanoparticle Superlattices. Advanced Materials, 2014, 26, 7235-7240.	11.1	40
64	Desktop nanofabrication with massively multiplexed beam pen lithography. Nature Communications, 2013, 4, 2103.	5.8	86
65	Hybrid Semiconductor Coreâ€Shell Nanowires with Tunable Plasmonic Nanoantennas. Advanced Materials, 2013, 25, 4515-4520.	11.1	28
66	Large-area molecular patterning with polymer pen lithography. Nature Protocols, 2013, 8, 2548-2560.	5.5	88
67	Role of Absorbed Solvent in Polymer Pen Lithography. Journal of Physical Chemistry B, 2013, 117, 16363-16368.	1.2	13
68	The role of viscosity on polymer ink transport in dip-pen nanolithography. Chemical Science, 2013, 4, 2093.	3.7	44
69	A cantilever-free approach to dot-matrix nanoprinting. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 12921-12924.	3.3	33
70	Plow and Ridge Nanofabrication. Small, 2013, 9, 3058-3062.	5.2	12
71	Locally Altering the Electronic Properties of Graphene by Nanoscopically Doping It with Rhodamine 6G. Nano Letters, 2013, 13, 1616-1621.	4.5	42
72	Tuning the Spring Constant of Cantilever-Free Tip Arrays. Nano Letters, 2013, 13, 664-667.	4.5	18

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73	Cantilever-free thermal actuation. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2013, 31, 06F201.	0.6	6
74	Delineating the pathways for the site-directed synthesis of individual nanoparticles on surfaces. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 887-891.	3.3	78
75	Electronic and Optical Vibrational Spectroscopy of Molecular Transport Junctions Created by Onâ€Wire Lithography. Small, 2013, 9, 1900-1903.	5.2	10
76	The importance of cantilever dynamics in the interpretation of Kelvin probe force microscopy. Journal of Applied Physics, 2012, 112, 064510.	1.1	6
77	High spatial resolution Kelvin probe force microscopy with coaxial probes. Nanotechnology, 2012, 23, 115703.	1.3	16
78	Multifunctional cantilever-free scanning probe arrays coated with multilayer graphene. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 18312-18317.	3.3	38
79	Self-driving capacitive cantilevers for high-frequency atomic force microscopy. Applied Physics Letters, 2012, 100, 053110.	1.5	9
80	OWL-Based Nanomasks for Preparing Graphene Ribbons with Sub-10 nm Gaps. Nano Letters, 2012, 12, 4734-4737.	4.5	15
81	Dispersible Surfaceâ€Enhanced Raman Scattering Nanosheets. Advanced Materials, 2012, 24, 6065-6070.	11.1	70
82	Triaxial AFM Probes for Noncontact Trapping and Manipulation. Nano Letters, 2011, 11, 3197-3201.	4.5	23
83	Coaxial atomic force microscope probes for imaging with dielectrophoresis. Applied Physics Letters, 2011, 98, 183103.	1.5	8
84	Scaling of transverse nuclear magnetic relaxation due to magnetic nanoparticle aggregation. Journal of Magnetism and Magnetic Materials, 2010, 322, 3122-3126.	1.0	32
85	Coaxial atomic force microscope tweezers. Applied Physics Letters, 2010, 96, 123109.	1.5	12
86	A microfluidic microprocessor: controlling biomimetic containers and cells using hybrid integrated circuit/microfluidic chips. Lab on A Chip, 2010, 10, 2937.	3.1	26
87	Proposed triaxial atomic force microscope contact-free tweezers for nanoassembly. Nanotechnology, 2009, 20, 385302.	1.3	15
88	High-Voltage Dielectrophoretic and Magnetophoretic Hybrid Integrated Circuit/Microfluidic Chip. Journal of Microelectromechanical Systems, 2009, 18, 1220-1225.	1.7	26
89	Microwave dielectric heating of drops in microfluidic devices. Lab on A Chip, 2009, 9, 1701.	3.1	86