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	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
2	Building superlattices from individual nanoparticles via template-confined DNA-mediated assembly. Science, 2018, 359, 669-672.	6.0	195
3	Autonomous experimentation systems for materials development: A community perspective. Matter, 2021, 4, 2702-2726.	5.0	143
4	Machine Learning in Nanoscience: Big Data at Small Scales. Nano Letters, 2020, 20, 2-10.	4.5	138
5	Tip-Directed Synthesis of Multimetallic Nanoparticles. Journal of the American Chemical Society, 2015, 137, 9167-9173.	6.6	136
6	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
7	A Bayesian experimental autonomous researcher for mechanical design. Science Advances, 2020, 6, eaaz1708.	4.7	127
8	Shape-Selective Deposition and Assembly of Anisotropic Nanoparticles. Nano Letters, 2014, 14, 2157-2161.	4.5	101
9	Large-area molecular patterning with polymer pen lithography. Nature Protocols, 2013, 8, 2548-2560.	5.5	88
10	Microwave dielectric heating of drops in microfluidic devices. Lab on A Chip, 2009, 9, 1701.	3.1	86
11	Desktop nanofabrication with massively multiplexed beam pen lithography. Nature Communications, 2013, 4, 2103.	5.8	86
12	Progress in Top-Down Control of Bottom-Up Assembly. Nano Letters, 2017, 17, 6508-6510.	4.5	81
13	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
14	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
15	Dispersible Surfaceâ€Enhanced Raman Scattering Nanosheets. Advanced Materials, 2012, 24, 6065-6070.	11.1	70
16	Giant conductivity switching of $LaAlO3/SrTiO3$ heterointerfaces governed by surface protonation. Nature Communications, 2016, 7, 10681.	5.8	68
17	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
18	Benchmarking the performance of Bayesian optimization across multiple experimental materials science domains. Npj Computational Materials, 2021, 7, .	3.5	62

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19	Material transport in dip-pen nanolithography. Frontiers of Physics, 2014, 9, 385-397.	2.4	60
20	High-Throughput, Algorithmic Determination of Nanoparticle Structure from Electron Microscopy Images. ACS Nano, 2015, 9, 12488-12495.	7.3	58
21	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
22	The role of viscosity on polymer ink transport in dip-pen nanolithography. Chemical Science, 2013, 4, 2093.	3.7	44
23	Locally Altering the Electronic Properties of Graphene by Nanoscopically Doping It with Rhodamine 6G. Nano Letters, 2013, 13, 1616-1621.	4.5	42
24	Oligonucleotide Flexibility Dictates Crystal Quality in DNAâ€Programmable Nanoparticle Superlattices. Advanced Materials, 2014, 26, 7235-7240.	11.1	40
25	Apertureless Cantilever-Free Pen Arrays for Scanning Photochemical Printing. Small, 2015, 11, 913-918.	5.2	39
26	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
27	Langmuir Analysis of Nanoparticle Polyvalency in DNAâ€Mediated Adsorption. Angewandte Chemie - International Edition, 2014, 53, 9532-9538.	7.2	36
28	Modulating the Bond Strength of DNAâ€"Nanoparticle Superlattices. ACS Nano, 2016, 10, 1771-1779.	7.3	36
29	Using simulation to accelerate autonomous experimentation: A case study using mechanics. IScience, 2021, 24, 102262.	1.9	35
30	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
31	Capillary bridge rupture in dip-pen nanolithography. Soft Matter, 2014, 10, 5603-5608.	1.2	33
32	Scaling of transverse nuclear magnetic relaxation due to magnetic nanoparticle aggregation. Journal of Magnetism and Magnetic Materials, 2010, 322, 3122-3126.	1.0	32
33	Elasticity and failure of liquid marbles: influence of particle coating and marble volume. Soft Matter, 2017, 13, 8903-8909.	1.2	29
34	Nanocombinatorics with Cantilever-Free Scanning Probe Arrays. ACS Nano, 2019, 13, 8-17.	7.3	29
35	Hybrid Semiconductor Coreâ€Shell Nanowires with Tunable Plasmonic Nanoantennas. Advanced Materials, 2013, 25, 4515-4520.	11.1	28
36	Hard Transparent Arrays for Polymer Pen Lithography. ACS Nano, 2016, 10, 3144-3148.	7.3	27

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37	Photoactuated Pens for Molecular Printing. Advanced Materials, 2018, 30, 1705303.	11.1	27
38	High-Voltage Dielectrophoretic and Magnetophoretic Hybrid Integrated Circuit/Microfluidic Chip. Journal of Microelectromechanical Systems, 2009, 18, 1220-1225.	1.7	26
39	A microfluidic microprocessor: controlling biomimetic containers and cells using hybrid integrated circuit/microfluidic chips. Lab on A Chip, 2010, 10, 2937.	3.1	26
40	Stiffness of HIVâ€1 Mimicking Polymer Nanoparticles Modulates Gangliosideâ€Mediated Cellular Uptake and Trafficking. Advanced Science, 2020, 7, 2000649.	5.6	26
41	Design and Realization of 3D Printed AFM Probes. Small, 2018, 14, e1800162.	5.2	25
42	Triaxial AFM Probes for Noncontact Trapping and Manipulation. Nano Letters, 2011, 11, 3197-3201.	4.5	23
43	Modular and Chemically Responsive Oligonucleotide â€œBondsâ€• in Nanoparticle Superlattices. Journal of the American Chemical Society, 2015, 137, 13566-13571.	6.6	23
44	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
45	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
46	Magnetorheological Fluidâ€Based Flow Control for Soft Robots. Advanced Intelligent Systems, 2020, 2, 2000139.	3.3	20
47	Critical Undercooling in DNA-Mediated Nanoparticle Crystallization. ACS Nano, 2016, 10, 1363-1368.	7.3	19
48	Polymer nanomechanics: Separating the size effect from the substrate effect in nanoindentation. Applied Physics Letters, 2017, 110, .	1.5	19
49	Tuning the Spring Constant of Cantilever-Free Tip Arrays. Nano Letters, 2013, 13, 664-667.	4.5	18
50	Measuring Nanoparticle Polarizability Using Fluorescence Microscopy. Nano Letters, 2019, 19, 5762-5768.	4.5	18
51	Quantifying Liquid Transport and Patterning Using Atomic Force Microscopy. Langmuir, 2017, 33, 5173-5178.	1.6	17
52	Massively parallel cantilever-free atomic force microscopy. Nature Communications, 2021, 12, 393.	5.8	17
53	High spatial resolution Kelvin probe force microscopy with coaxial probes. Nanotechnology, 2012, 23, 115703.	1.3	16
54	Proposed triaxial atomic force microscope contact-free tweezers for nanoassembly. Nanotechnology, 2009, 20, 385302.	1.3	15

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55	OWL-Based Nanomasks for Preparing Graphene Ribbons with Sub-10 nm Gaps. Nano Letters, 2012, 12, 4734-4737.	4.5	15
56	Liquid-Phase Beam Pen Lithography. Small, 2016, 12, 988-993.	5.2	15
57	Combinatorial Screening of Mesenchymal Stem Cell Adhesion and Differentiation Using Polymer Pen Lithography. Methods in Cell Biology, 2014, 119, 261-276.	0.5	14
58	Role of Absorbed Solvent in Polymer Pen Lithography. Journal of Physical Chemistry B, 2013, 117, 16363-16368.	1.2	13
59	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
60	Coaxial atomic force microscope tweezers. Applied Physics Letters, 2010, 96, 123109.	1.5	12
61	Plow and Ridge Nanofabrication. Small, 2013, 9, 3058-3062.	5.2	12
62	Confinement-Induced Stiffening of Elastomer Thin Films. Journal of Physical Chemistry B, 2018, 122, 10767-10773.	1.2	12
63	Closed-Loop Nanopatterning of Liquids with Dip-Pen Nanolithography. ACS Applied Materials & Interfaces, 2021, 13, 14710-14717.	4.0	12
64	Physiologically Relevant Mechanics of Biodegradable Polyester Nanoparticles. Nano Letters, 2020, 20, 7536-7542.	4.5	11
65	Shear thickening prevents slip in magnetorheological fluids. Smart Materials and Structures, 2020, 29, 07LT02.	1.8	11
66	Electronic and Optical Vibrational Spectroscopy of Molecular Transport Junctions Created by Onâ€Wire Lithography. Small, 2013, 9, 1900-1903.	5.2	10
67	Patterning Porosity in Hydrogels by Arresting Phase Separation. ACS Applied Materials & Interfaces, 2018, 10, 34604-34610.	4.0	10
68	Self-driving capacitive cantilevers for high-frequency atomic force microscopy. Applied Physics Letters, 2012, 100, 053110.	1.5	9
69	Combined Chemical and Physical Encoding with Silk Fibroinâ€Embedded Nanostructures. Small, 2014, 10, 1485-1489.	5.2	9
70	MODEL, GUESS, CHECK: Wordle as a primer on active learning for materials research. Npj Computational Materials, 2022, 8, .	3.5	9
71	Coaxial atomic force microscope probes for imaging with dielectrophoresis. Applied Physics Letters, 2011, 98, 183103.	1.5	8
72	Design of Elastomer-CNT Film Photoactuators for Nanolithography. Polymers, 2019, 11, 314.	2.0	8

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73	Failure of Particle-Laden Interfaces Studied Using The Funnel Method. Colloids and Interface Science Communications, 2019, 28, 54-59.	2.0	7
74	The importance of cantilever dynamics in the interpretation of Kelvin probe force microscopy. Journal of Applied Physics, 2012, 112, 064510.	1.1	6
75	Cantilever-free thermal actuation. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2013, 31, 06F201.	0.6	6
76	Reinforcing Magnetorheological Fluids with Highly Anisotropic 2D Materials. ChemPhysChem, 2021, 22, 435-440.	1.0	6
77	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
78	Dielectrophoresis of air. Applied Physics Letters, 2020, 116, 084101.	1.5	4
79	Theory for hierarchical assembly with dielectrophoresis and the role of particle anisotropy. Electrophoresis, 2021, 42, 635-643.	1.3	4
80	Designing Composites with Target Effective Youngâ€™s Modulus using Reinforcement Learning. , 2021, , .		4
81	Dimensions of Smart Additive Manufacturing. Advanced Intelligent Systems, 2021, 3, .	3.3	4
82	High-resolution measurement of atomic force microscope cantilever resonance frequency. Review of Scientific Instruments, 2020, 91, 123705.	0.6	3
83	A stepped-sine curve-fit algorithm for finding cantilever resonance shifts in AFM. , 2019, , .		2
84	Magnetorheological Fluidâ€Based Flow Control for Soft Robots. Advanced Intelligent Systems, 2020, 2, 2070107.	3.3	2
85	High-Throughput Multiobjective Optimization of Patterned Multifunctional Surfaces. ACS Applied Materials & Interfaces, 2020, 12, 32069-32077.	4.0	2
86	Electric field induced macroscopic cellular phase of nanoparticles. Soft Matter, 2022, 18, 1991-1996.	1.2	2
87	Fabrication of Coaxial and Triaxial Atomic Force Microscope Imaging Probes. Materials Research Society Symposia Proceedings, 2014, 1712, 13.	0.1	0
88	Reinforcing Magnetorheological Fluids with Highly Anisotropic 2D Materials. ChemPhysChem, 2021, 22, 432-432.	1.0	0
89	Chemically-adhesive particles form stronger and stiffer magnetorheological fluids. Smart Materials and Structures, 2022, 31, 077001.	1.8	0