

Paul V Braun

List of Publications by Year in descending order

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97
papers

14,274
citations

36203

51
h-index

37111

96
g-index

99
all docs

99
docs citations

99
times ranked

18306
citing authors

#	ARTICLE	IF	CITATIONS
1	Force-induced activation of covalent bonds in mechanoresponsive polymeric materials. <i>Nature</i> , 2009, 459, 68-72.	13.7	1,446
2	Nanoscale thermal transport. II. 2003â€“2012. <i>Applied Physics Reviews</i> , 2014, 1, 011305.	5.5	1,277
3	Three-dimensional bicontinuous ultrafast-charge and -discharge bulk battery electrodes. <i>Nature Nanotechnology</i> , 2011, 6, 277-281.	15.6	1,006
4	Molecular Manipulation of Microstructures: Biomaterials, Ceramics, and Semiconductors. <i>Science</i> , 1997, 277, 1242-1248.	6.0	790
5	Bioresorbable silicon electronic sensors for the brain. <i>Nature</i> , 2016, 530, 71-76.	13.7	778
6	Self-Healing Polymer Coatings. <i>Advanced Materials</i> , 2009, 21, 645-649.	11.1	673
7	Effects of chemical bonding on heat transport across interfaces. <i>Nature Materials</i> , 2012, 11, 502-506.	13.3	560
8	Semiconducting superlattices templated by molecular assemblies. <i>Nature</i> , 1996, 380, 325-328.	13.7	525
9	High-power lithium ion microbatteries from interdigitated three-dimensional bicontinuous nanoporous electrodes. <i>Nature Communications</i> , 2013, 4, 1732.	5.8	513
10	Electrochemically grown photonic crystals. <i>Nature</i> , 1999, 402, 603-604.	13.7	436
11	Patterned Colloidal Deposition Controlled by Electrostatic and Capillary Forces. <i>Physical Review Letters</i> , 2000, 84, 2997-3000.	2.9	414
12	Thermal Conductance of Hydrophilic and Hydrophobic Interfaces. <i>Physical Review Letters</i> , 2006, 96, 186101.	2.9	371
13	Colloidal metal particles as probes of nanoscale thermal transport in fluids. <i>Physical Review B</i> , 2002, 66, .	1.1	267
14	Three-Dimensional Metal Scaffold Supported Bicontinuous Silicon Battery Anodes. <i>Nano Letters</i> , 2012, 12, 2778-2783.	4.5	254
15	Force-Induced Redistribution of a Chemical Equilibrium. <i>Journal of the American Chemical Society</i> , 2010, 132, 16107-16111.	6.6	234
16	Glucose-Sensitive Inverse Opal Hydrogels:Â Analysis of Optical Diffraction Response. <i>Langmuir</i> , 2004, 20, 3096-3106.	1.6	232
17	Nanostructure Templating in Inorganic Solids with Organic Lyotropic Liquid Crystals. <i>Journal of the American Chemical Society</i> , 1999, 121, 7302-7309.	6.6	230
18	Coaxial Electrospinning of Self-Healing Coatings. <i>Advanced Materials</i> , 2010, 22, 496-499.	11.1	226

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19	Holographic patterning of high-performance on-chip 3D lithium-ion microbatteries. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 6573-6578.	3.3	179
20	High power rechargeable batteries. Current Opinion in Solid State and Materials Science, 2012, 16, 186-198.	5.6	176
21	Multidimensional Architectures for Functional Optical Devices. Advanced Materials, 2010, 22, 1084-1101.	11.1	166
22	CdS mineralization of hexagonal, lamellar, and cubic lyotropic liquid crystals. Materials Research Bulletin, 1999, 34, 463-469.	2.7	133
23	AuPd Metal Nanoparticles as Probes of Nanoscale Thermal Transport in Aqueous Solution. Journal of Physical Chemistry B, 2004, 108, 18870-18875.	1.2	132
24	Exploiting Force Sensitive Spiroyrans as Molecular Level Probes. Macromolecules, 2013, 46, 3746-3752.	2.2	123
25	Epitaxial growth of three-dimensionally architected optoelectronic devices. Nature Materials, 2011, 10, 676-681.	13.3	113
26	Light-triggered thermal conductivity switching in azobenzene polymers. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 5973-5978.	3.3	99
27	Microcapsules containing suspensions of carbon nanotubes. Journal of Materials Chemistry, 2009, 19, 6093.	6.7	98
28	Double Direct Templating of Periodically Nanostructured ZnS Hollow Microspheres. Journal of the American Chemical Society, 2005, 127, 16356-16357.	6.6	96
29	Solvent Swelling Activation of a Mechanophore in a Polymer Network. Macromolecules, 2014, 47, 2690-2694.	2.2	96
30	Fabrication of Three-dimensional Photonic Crystals Using Multibeam Interference Lithography and Electrodeposition. Advanced Materials, 2009, 21, 3012-3015.	11.1	94
31	3D Scaffolded Nickel-Tin Anodes with Enhanced Cyclability. Advanced Materials, 2016, 28, 742-747.	11.1	90
32	Interfacial thermal conductance in spun-cast polymer films and polymer brushes. Applied Physics Letters, 2010, 97, .	1.5	87
33	Testing the minimum thermal conductivity model for amorphous polymers using high pressure. Physical Review B, 2011, 83, .	1.1	87
34	Graphene Sandwiched Mesostructured Li-ion Battery Electrodes. Advanced Materials, 2016, 28, 7696-7702.	11.1	86
35	Thermally Functional Liquid Crystal Networks by Magnetic Field Driven Molecular Orientation. ACS Macro Letters, 2016, 5, 955-960.	2.3	84
36	Unveiling Surface Redox Charge Storage of Interacting Two-Dimensional Heteronanoshets in Hierarchical Architectures. Nano Letters, 2015, 15, 2269-2277.	4.5	80

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37	Photoelectrochemical Behavior of Hierarchically Structured Si/WO ₃ Core-Shell Tandem Photoanodes. Nano Letters, 2014, 14, 2310-2317.	4.5	78
38	Molecular Imprinting of Biomineralized CdS Nanostructures: Crystallographic Control Using Self-Assembled DNA-Membrane Templates. Journal of the American Chemical Society, 2003, 125, 11786-11787.	6.6	76
39	Lyotropic Liquid Crystals as Nanoreactors for Nanoparticle Synthesis. Chemistry of Materials, 2004, 16, 2201-2207.	3.2	76
40	Three-Dimensionally Mesoporous Fe ₂ O ₃ Electrodes with Good Rate Performance and Reduced Voltage Hysteresis. Chemistry of Materials, 2015, 27, 2803-2811.	3.2	74
41	Quasi-ballistic Electronic Thermal Conduction in Metal Inverse Opals. Nano Letters, 2016, 16, 2754-2761.	4.5	72
42	Transparent Self-Healing Polymers Based on Encapsulated Plasticizers in a Thermoplastic Matrix. Advanced Functional Materials, 2011, 21, 4705-4711.	7.8	71
43	Ultralow Thermal Conductivity in Organoclay Nanolaminates Synthesized via Simple Self-Assembly. Nano Letters, 2013, 13, 2215-2219.	4.5	68
44	High-Performance Mesoporous Organic Hybrid Pseudocapacitor Electrodes. Advanced Functional Materials, 2016, 26, 903-910.	7.8	63
45	High Volumetric Capacity Three-Dimensionally Sphere-Caged Secondary Battery Anodes. Nano Letters, 2016, 16, 4501-4507.	4.5	62
46	Electroplating lithium transition metal oxides. Science Advances, 2017, 3, e1602427.	4.7	62
47	Thin Film Condensation on Nanostructured Surfaces. Advanced Functional Materials, 2018, 28, 1707000.	7.8	60
48	Lamellar semiconductor-organic nanostructures from self-assembled templates. Advanced Materials, 1996, 8, 1022-1025.	11.1	57
49	Room-Temperature Polydimethylsiloxane-Based Self-Healing Polymers. Chemistry of Materials, 2012, 24, 4209-4214.	3.2	56
50	Cu ₂ O Inverse Woodpile Photonic Crystals by Prism Holographic Lithography and Electrodeposition. Advanced Materials, 2011, 23, 2749-2752.	11.1	55
51	Improved Performance in FeF ₂ Conversion Cathodes through Use of a Conductive 3D Scaffold and Al ₂ O ₃ ALD Coating. Advanced Functional Materials, 2017, 27, 1702783.	7.8	55
52	Flexible Transient Optical Waveguides and Surface-Wave Biosensors Constructed from Monocrystalline Silicon. Advanced Materials, 2018, 30, e1801584.	11.1	55
53	Roles of Anionic and Cationic Template Components in Biomineralization of CdS Nanorods Using Self-Assembled DNA-Membrane Complexes. Journal of the American Chemical Society, 2004, 126, 14157-14165.	6.6	50
54	Materials Chemistry in 3D Templates for Functional Photonics. Chemistry of Materials, 2014, 26, 277-286.	3.2	49

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55	Hydrothermal Fabrication of Three-dimensional Secondary Battery Anodes. <i>Advanced Materials</i> , 2014, 26, 7096-7101.	11.1	48
56	Rational Design of Hierarchically Open-porous Spherical Hybrid Architectures for Lithium-ion Batteries. <i>Advanced Energy Materials</i> , 2019, 9, 1802816.	10.2	48
57	Mesoporous ZnS Nanorattles: Programmed Size Selected Access to Encapsulated Enzymes. <i>Nano Letters</i> , 2009, 9, 1994-1998.	4.5	47
58	High Volumetric and Gravimetric Capacity Electrodeposited Mesostructured Sb_2O_3 Sodium Ion Battery Anodes. <i>Small</i> , 2019, 15, e1900258.	5.2	46
59	Programming structure into 3D nanomaterials. <i>Materials Today</i> , 2009, 12, 28-35.	8.3	41
60	Electrode architectures for high capacity multivalent conversion compounds: iron (ii and iii) fluoride. <i>RSC Advances</i> , 2014, 4, 6730.	1.7	39
61	Self-Assembly of Monodisperse Starburst Carbon Spheres into Hierarchically Organized Nanostructured Supercapacitor Electrodes. <i>ACS Applied Materials & Interfaces</i> , 2015, 7, 9128-9133.	4.0	36
62	High strength metallic wood from nanostructured nickel inverse opal materials. <i>Scientific Reports</i> , 2019, 9, 719.	1.6	36
63	High capacity 3D structured tin-based electroplated Li-ion battery anodes. <i>Energy Storage Materials</i> , 2019, 17, 151-156.	9.5	36
64	Integration of high capacity materials into interdigitated mesostructured electrodes for high energy and high power density primary microbatteries. <i>Journal of Power Sources</i> , 2016, 315, 308-315.	4.0	32
65	In Operando Strain Measurement of Bicontinuous Silicon-coated Nickel Inverse Opal Anodes for Li-ion Batteries. <i>Advanced Energy Materials</i> , 2015, 5, 1500466.	10.2	30
66	Modulating Noncovalent Cross-links with Molecular Switches. <i>Journal of the American Chemical Society</i> , 2019, 141, 3597-3604.	6.6	28
67	Double Direct Templated Hollow ZnS Microspheres Formed on Chemically Modified Silica Colloids. <i>Chemistry of Materials</i> , 2009, 21, 628-634.	3.2	27
68	Functional materials and devices by self-assembly. <i>MRS Bulletin</i> , 2020, 45, 799-806.	1.7	27
69	Molecular Tailoring of Interfacial Failure. <i>Langmuir</i> , 2014, 30, 11096-11102.	1.6	23
70	Performance Modeling and Design of Ultra-High Power Microbatteries. <i>Journal of the Electrochemical Society</i> , 2017, 164, E3122-E3131.	1.3	22
71	Three-dimensionally scaffolded Co_3O_4 nanosheet anodes with high rate performance. <i>Journal of Power Sources</i> , 2015, 299, 40-48.	4.0	21
72	Archimedean lattices emerge in template-directed eutectic solidification. <i>Nature</i> , 2020, 577, 355-358.	13.7	21

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73	Anisotropic Colloidal Templating of 3D Ceramic, Semiconducting, Metallic, and Polymeric Architectures. <i>Advanced Materials</i> , 2014, 26, 1740-1745.	11.1	20
74	Deterministic Design of Chemistry and Mesosstructure in Li-Ion Battery Electrodes. <i>ACS Nano</i> , 2018, 12, 3060-3064.	7.3	20
75	Templateâ€Directed Solidification of Eutectic Optical Materials. <i>Advanced Optical Materials</i> , 2018, 6, 1800071.	3.6	19
76	Epitaxial Growth of Three-Dimensionally Mesosstructured Single-Crystalline Cu ₂ O via Templated Electrodeposition. <i>Chemistry of Materials</i> , 2014, 26, 7051-7058.	3.2	17
77	Enabling New Classes of Templated Materials through Mesoporous Carbon Colloidal Crystals. <i>Advanced Optical Materials</i> , 2013, 1, 300-304.	3.6	16
78	Holographically Defined Nanoparticle Placement in 3D Colloidal Crystals. <i>Journal of the American Chemical Society</i> , 2010, 132, 9958-9959.	6.6	14
79	High Fullâ€Electrode Basis Capacity Templateâ€Free 3D Nanocomposite Secondary Battery Anodes. <i>Small</i> , 2015, 11, 6265-6271.	5.2	14
80	Electrodeposited high strength, thermally stable spectrally selective rhenium nickel inverse opals. <i>Nanoscale</i> , 2017, 9, 11187-11194.	2.8	14
81	Reconfigurable nanoscale soft materials. <i>Current Opinion in Solid State and Materials Science</i> , 2019, 23, 41-49.	5.6	14
82	Knowing when small is better. <i>Nature Nanotechnology</i> , 2014, 9, 962-963.	15.6	13
83	Size control of cross-linked carboxy-functionalized polystyrene particles: Four orders of magnitude of dimensional versatility. <i>European Polymer Journal</i> , 2018, 101, 202-210.	2.6	13
84	Force-Modulated Equilibria of Mechanophoreâ€Metal Coordinate Bonds. <i>Chemistry of Materials</i> , 2020, 32, 3869-3878.	3.2	12
85	Ultralow Thermal Conductivity in Nanoporous Crystalline Fe ₃ O ₄ . <i>Journal of Physical Chemistry C</i> , 2021, 125, 6897-6908.	1.5	12
86	Pack Aluminization Assisted Enhancement of Thermo-mechanical Properties in Nickel Inverse Opal Structures. <i>Chemistry of Materials</i> , 2018, 30, 1648-1654.	3.2	10
87	Epitaxial growth of three dimensionally structured III-V photonic crystal via hydride vapor phase epitaxy. <i>Journal of Applied Physics</i> , 2015, 118, 224303.	1.1	9
88	Electrodeposition of atmosphere-sensitive ternary sodium transition metal oxide films for sodium-based electrochemical energy storage. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	9
89	Template directed assembly of dynamic micellar nanoparticles. <i>Soft Matter</i> , 2011, 7, 10252.	1.2	7
90	Three-dimensional mesostructured binder-free nickel-based TiO ₂ /RGO lithium-ion battery negative electrodes with enhanced volumetric capacity. <i>Ceramics International</i> , 2021, 47, 21381-21387.	2.3	6

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91	Fiber Electrodes Mesostructured on Carbon Fibers for Energy Storage. ACS Applied Energy Materials, 2021, 4, 13716-13724.	2.5	5
92	Programmed size-selected permeation of ssDNA into ZnS mesoporous hollow spheres. Soft Matter, 2012, 8, 4396.	1.2	3
93	High power primary lithium ion microbatteries. Journal of Physics: Conference Series, 2013, 476, 012087.	0.3	3
94	Enhanced Secondary Battery Anodes Based on Si and Fe ₃ O ₄ Nanoparticle Infilled Monodisperse Carbon Starburst Colloidal Crystals. Particle and Particle Systems Characterization, 2015, 32, 928-933.	1.2	3
95	Control of lamellar eutectic orientation via template-directed solidification. Acta Materialia, 2019, 166, 715-722.	3.8	3
96	Dendritic nanostructured FeS ₂ -based high stability and capacity Li-ion cathodes. RSC Advances, 2018, 8, 38745-38750.	1.7	2
97	Salt Water-Triggered Ionic Cross-Linking of Polymer Composites by Controlled Release of Functional Ions. ACS Omega, 2018, 3, 16127-16133.	1.6	0