

# David G Mackanic

## List of Publications by Year in descending order

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77  
papers

25,253  
citations

18436

62  
h-index

69108

77  
g-index

78  
all docs

78  
docs citations

78  
times ranked

22760  
citing authors

#	ARTICLE	IF	CITATIONS
1	Pathways for practical high-energy long-cycling lithium metal batteries. <i>Nature Energy</i> , 2019, 4, 180-186.	19.8	2,101
2	Skin electronics from scalable fabrication of an intrinsically stretchable transistor array. <i>Nature</i> , 2018, 555, 83-88.	13.7	1,588
3	Stable Li-ion battery anodes by in-situ polymerization of conducting hydrogel to conformally coat silicon nanoparticles. <i>Nature Communications</i> , 2013, 4, 1943.	5.8	1,138
4	Self-healing chemistry enables the stable operation of silicon microparticle anodes for high-energy lithium-ion batteries. <i>Nature Chemistry</i> , 2013, 5, 1042-1048.	6.6	1,031
5	A highly stretchable, transparent, and conductive polymer. <i>Science Advances</i> , 2017, 3, e1602076.	4.7	962
6	Electronic Skin: Recent Progress and Future Prospects for Skin-Attachable Devices for Health Monitoring, Robotics, and Prosthetics. <i>Advanced Materials</i> , 2019, 31, e1904765.	11.1	936
7	Side Chain Engineering in Solution-Processable Conjugated Polymers. <i>Chemistry of Materials</i> , 2014, 26, 604-615.	3.2	932
8	Highly stretchable polymer semiconductor films through the nanoconfinement effect. <i>Science</i> , 2017, 355, 59-64.	6.0	897
9	Improving the Performance of Lithium-Sulfur Batteries by Conductive Polymer Coating. <i>ACS Nano</i> , 2011, 5, 9187-9193.	7.3	815
10	Tough and Water-Insensitive Self-Healing Elastomer for Robust Electronic Skin. <i>Advanced Materials</i> , 2018, 30, e1706846.	11.1	798
11	An integrated self-healable electronic skin system fabricated via dynamic reconstruction of a nanostructured conducting network. <i>Nature Nanotechnology</i> , 2018, 13, 1057-1065.	15.6	736
12	Molecular design for electrolyte solvents enabling energy-dense and long-cycling lithium metal batteries. <i>Nature Energy</i> , 2020, 5, 526-533.	19.8	642
13	Designing polymers for advanced battery chemistries. <i>Nature Reviews Materials</i> , 2019, 4, 312-330.	23.3	579
14	Soft and elastic hydrogel-based microelectronics for localized low-voltage neuromodulation. <i>Nature Biomedical Engineering</i> , 2019, 3, 58-68.	11.6	499
15	Skin-inspired electronic devices. <i>Materials Today</i> , 2014, 17, 321-331.	8.3	487
16	A stretchable and biodegradable strain and pressure sensor for orthopaedic application. <i>Nature Electronics</i> , 2018, 1, 314-321.	13.1	469
17	Quadruple H-Bonding Cross-Linked Supramolecular Polymeric Materials as Substrates for Stretchable, Antitearing, and Self-Healable Thin Film Electrodes. <i>Journal of the American Chemical Society</i> , 2018, 140, 5280-5289.	6.6	464
18	Lithium Metal Anodes with an Adaptive Solid-Liquid Interfacial Protective Layer. <i>Journal of the American Chemical Society</i> , 2017, 139, 4815-4820.	6.6	460

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19	A wireless body area sensor network based on stretchable passive tags. <i>Nature Electronics</i> , 2019, 2, 361-368.	13.1	421
20	Multifunctional materials for implantable and wearable photonic healthcare devices. <i>Nature Reviews Materials</i> , 2020, 5, 149-165.	23.3	403
21	A Flexible Bimodal Sensor Array for Simultaneous Sensing of Pressure and Temperature. <i>Advanced Materials</i> , 2014, 26, 796-804.	11.1	375
22	Materials and structural designs of stretchable conductors. <i>Chemical Society Reviews</i> , 2019, 48, 2946-2966.	18.7	367
23	Stretchable, elastic materials and devices for solar energy conversion. <i>Energy and Environmental Science</i> , 2011, 4, 3314.	15.6	356
24	Mechanically tunable conductive interpenetrating network hydrogels that mimic the elastic moduli of biological tissue. <i>Nature Communications</i> , 2018, 9, 2740.	5.8	344
25	Artificial multimodal receptors based on ion relaxation dynamics. <i>Science</i> , 2020, 370, 961-965.	6.0	343
26	Rational solvent molecule tuning for high-performance lithium metal battery electrolytes. <i>Nature Energy</i> , 2022, 7, 94-106.	19.8	336
27	Concentrated mixed cation acetate-water-in-salt solutions as green and low-cost high voltage electrolytes for aqueous batteries. <i>Energy and Environmental Science</i> , 2018, 11, 2876-2883.	15.6	315
28	Effects of Polymer Coatings on Electrodeposited Lithium Metal. <i>Journal of the American Chemical Society</i> , 2018, 140, 11735-11744.	6.6	307
29	High-Performance Lithium Metal Negative Electrode with a Soft and Flowable Polymer Coating. <i>ACS Energy Letters</i> , 2016, 1, 1247-1255.	8.8	281
30	Stretchable temperature-sensing circuits with strain suppression based on carbon nanotube transistors. <i>Nature Electronics</i> , 2018, 1, 183-190.	13.1	263
31	Thermodynamically stable whilst kinetically labile coordination bonds lead to strong and tough self-healing polymers. <i>Nature Communications</i> , 2019, 10, 1164.	5.8	258
32	Fast and reversible thermoresponsive polymer switching materials for safer batteries. <i>Nature Energy</i> , 2016, 1, .	19.8	253
33	Decoupling of mechanical properties and ionic conductivity in supramolecular lithium ion conductors. <i>Nature Communications</i> , 2019, 10, 5384.	5.8	249
34	3D Porous Sponge-Inspired Electrode for Stretchable Lithium-Ion Batteries. <i>Advanced Materials</i> , 2016, 28, 3578-3583.	11.1	247
35	A New Class of Ionically Conducting Fluorinated Ether Electrolytes with High Electrochemical Stability. <i>Journal of the American Chemical Society</i> , 2020, 142, 7393-7403.	6.6	225
36	Ionically Conductive Self-Healing Binder for Low Cost Si Microparticles Anodes in Li-Ion Batteries. <i>Advanced Energy Materials</i> , 2018, 8, 1703138.	10.2	224

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37	Stretchable electrochemical energy storage devices. <i>Chemical Society Reviews</i> , 2020, 49, 4466-4495.	18.7	209
38	High-Areal-Capacity Silicon Electrodes with Low-Cost Silicon Particles Based on Spatial Control of Self-Healing Binder. <i>Advanced Energy Materials</i> , 2015, 5, 1401826.	10.2	207
39	Steric Effect Tuned Ion Solvation Enabling Stable Cycling of High-Voltage Lithium Metal Battery. <i>Journal of the American Chemical Society</i> , 2021, 143, 18703-18713.	6.6	205
40	A Stretchable Graphitic Carbon/Si Anode Enabled by Conformal Coating of a Self-Healing Elastic Polymer. <i>Advanced Materials</i> , 2016, 28, 2455-2461.	11.1	197
41	Liquid electrolyte: The nexus of practical lithium metal batteries. <i>Joule</i> , 2022, 6, 588-616.	11.7	191
42	Capturing the swelling of solid-electrolyte interphase in lithium metal batteries. <i>Science</i> , 2022, 375, 66-70.	6.0	183
43	Crosslinked Poly(tetrahydrofuran) as a Loosely Coordinating Polymer Electrolyte. <i>Advanced Energy Materials</i> , 2018, 8, 1800703.	10.2	177
44	Polymers in Lithium-Ion and Lithium Metal Batteries. <i>Advanced Energy Materials</i> , 2021, 11, 2003239.	10.2	160
45	Stretchable Lithium-Ion Batteries Enabled by Device-Scaled Wavy Structure and Elastic-Sticky Separator. <i>Advanced Energy Materials</i> , 2017, 7, 1701076.	10.2	158
46	Suspension electrolyte with modified Li <sup>+</sup> solvation environment for lithium metal batteries. <i>Nature Materials</i> , 2022, 21, 445-454.	13.3	155
47	Tortuosity Effects in Lithium-Metal Host Anodes. <i>Joule</i> , 2020, 4, 938-952.	11.7	150
48	Standalone real-time health monitoring patch based on a stretchable organic optoelectronic system. <i>Science Advances</i> , 2021, 7, .	4.7	144
49	Enabling Deformable and Stretchable Batteries. <i>Advanced Energy Materials</i> , 2020, 10, 2001424.	10.2	136
50	Design Principles of Artificial Solid Electrolyte Interphases for Lithium-Metal Anodes. <i>Cell Reports Physical Science</i> , 2020, 1, 100119.	2.8	133
51	A Dual-Crosslinking Design for Resilient Lithium-Ion Conductors. <i>Advanced Materials</i> , 2018, 30, e1804142.	11.1	128
52	Stretchable and ultraflexible organic electronics. <i>MRS Bulletin</i> , 2017, 42, 93-97.	1.7	125
53	Corrosion of lithium metal anodes during calendar ageing and its microscopic origins. <i>Nature Energy</i> , 2021, 6, 487-494.	19.8	124
54	Dual-Solvent Li-Ion Solvation Enables High-Performance Li-Metal Batteries. <i>Advanced Materials</i> , 2021, 33, e2008619.	11.1	123

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55	Bring on the bodyNET. <i>Nature</i> , 2017, 549, 328-330.	13.7	121
56	A design strategy for high mobility stretchable polymer semiconductors. <i>Nature Communications</i> , 2021, 12, 3572.	5.8	94
57	The Effects of Cross-Linking in a Supramolecular Binder on Cycle Life in Silicon Microparticle Anodes. <i>ACS Applied Materials &amp; Interfaces</i> , 2016, 8, 2318-2324.	4.0	90
58	Nonpolar Alkanes Modify Lithium-Ion Solvation for Improved Lithium Deposition and Stripping. <i>Advanced Energy Materials</i> , 2019, 9, 1902116.	10.2	86
59	Biomimetic Impact Protective Supramolecular Polymeric Materials Enabled by Quadruple H-Bonding. <i>Journal of the American Chemical Society</i> , 2021, 143, 1162-1170.	6.6	85
60	Electrode Design with Integration of High Tortuosity and Sulfur-Philicity for High-Performance Lithium-Sulfur Battery. <i>Matter</i> , 2020, 2, 1605-1620.	5.0	83
61	Potentiometric Measurement to Probe Solvation Energy and Its Correlation to Lithium Battery Cyclability. <i>Journal of the American Chemical Society</i> , 2021, 143, 10301-10308.	6.6	83
62	High-Transconductance Stretchable Transistors Achieved by Controlled Gold Microcrack Morphology. <i>Advanced Electronic Materials</i> , 2019, 5, 1900347.	2.6	70
63	A Cation-Tethered Flowable Polymeric Interface for Enabling Stable Deposition of Metallic Lithium. <i>Journal of the American Chemical Society</i> , 2020, 142, 21393-21403.	6.6	65
64	A Design Strategy for Intrinsically Stretchable High-Performance Polymer Semiconductors: Incorporating Conjugated Rigid Fused-Rings with Bulky Side Groups. <i>Journal of the American Chemical Society</i> , 2021, 143, 11679-11689.	6.6	65
65	F4TCNQ as an Additive to Impart Stretchable Semiconductors with High Mobility and Stability. <i>Advanced Electronic Materials</i> , 2020, 6, 2000251.	2.6	54
66	Assembly of Viral Hydrogels for Three-Dimensional Conducting Nanocomposites. <i>Advanced Materials</i> , 2014, 26, 5101-5107.	11.1	49
67	Efficient Lithium Metal Cycling over a Wide Range of Pressures from an Anion-Derived Solid-Electrolyte Interphase Framework. <i>ACS Energy Letters</i> , 2021, 6, 816-825.	8.8	46
68	An X-ray Photoelectron Spectroscopy Primer for Solid Electrolyte Interphase Characterization in Lithium Metal Anodes. <i>ACS Energy Letters</i> , 2022, 7, 2540-2546.	8.8	46
69	Concentration and velocity profiles in a polymeric lithium-ion battery electrolyte. <i>Energy and Environmental Science</i> , 2020, 13, 4312-4321.	15.6	43
70	Reprocessable and Recyclable Polymer Network Electrolytes via Incorporation of Dynamic Covalent Bonds. <i>Chemistry of Materials</i> , 2022, 34, 2393-2399.	3.2	43
71	Effects of Polymer Coating Mechanics at Solid-Electrolyte Interphase for Stabilizing Lithium Metal Anodes. <i>Advanced Energy Materials</i> , 2022, 12, .	10.2	30
72	Interfacial Speciation Determines Interfacial Chemistry: X-Ray-Induced Lithium Fluoride Formation from Water-In-Salt Electrolytes on Solid Surfaces. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 23180-23187.	7.2	28

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73	Tuning Fluorination of Linear Carbonate for Lithium-Ion Batteries. Journal of the Electrochemical Society, 2022, 169, 040555.	1.3	24
74	Enhanced Cycling Stability of Sulfur Electrodes through Effective Binding of Pyridine-Functionalized Polymer. ACS Energy Letters, 2017, 2, 2454-2462.	8.8	23
75	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.	1.6	9
76	Analysis of Photothermal Release of Oligonucleotides from Hollow Gold Nanospheres by Surface-Enhanced Raman Scattering. Journal of Physical Chemistry C, 2016, 120, 20677-20683.	1.5	6
77	Development of a Software-In-The-Loop Model for a Parallel Plug-In Hybrid Electric Vehicle. , 0, , .		3