David G Mackanic

List of Publications by Citations

73 papers	15,991 citations	49 h-index	78 g-index
78 ext. papers	20,316 ext. citations	25.2 avg, IF	7.09 L-index

#	Paper	IF	Citations
73	Pathways for practical high-energy long-cycling lithium metal batteries. *Nature Energy*, **2019**, 4, 180-186	62.3	1202
72	Skin electronics from scalable fabrication of an intrinsically stretchable transistor array. *Nature*, **2018**, 555, 83-88	50.4	1089
71	Stable Li-ion battery anodes by in-situ polymerization of conducting hydrogel to conformally coat silicon nanoparticles. *Nature Communications*, **2013**, 4, 1943	17.4	971
70	Self-healing chemistry enables the stable operation of silicon microparticle anodes for high-energy lithium-ion batteries. *Nature Chemistry*, **2013**, 5, 1042-8	17.6	856
69	Side Chain Engineering in Solution-Processable Conjugated Polymers. *Chemistry of Materials*, **2014**, 26, 604-615	9.6	798
68	Improving the performance of lithium-sulfur batteries by conductive polymer coating. *ACS Nano*, **2011**, 5, 9187-93	16.7	756
67	A highly stretchable, transparent, and conductive polymer. *Science Advances*, **2017**, 3, e1602076	14.3	674
66	Highly stretchable polymer semiconductor films through the nanoconfinement effect. *Science*, **2017**, 355, 59-64	33.3	651
65	Tough and Water-Insensitive Self-Healing Elastomer for Robust Electronic Skin. *Advanced Materials*, **2018**, 30, e1706846	24	523
64	An integrated self-healable electronic skin system fabricated via dynamic reconstruction of a nanostructured conducting network. *Nature Nanotechnology*, **2018**, 13, 1057-1065	28.7	510
63	Electronic Skin: Recent Progress and Future Prospects for Skin-Attachable Devices for Health Monitoring, Robotics, and Prosthetics. *Advanced Materials*, **2019**, 31, e1904765	24	498
62	Skin-inspired electronic devices. *Materials Today*, **2014**, 17, 321-331	21.8	380
61	Lithium Metal Anodes with an Adaptive "Solid-Liquid" Interfacial Protective Layer. *Journal of the American Chemical Society*, **2017**, 139, 4815-4820	16.4	352
60	Designing polymers for advanced battery chemistries. *Nature Reviews Materials*, **2019**, 4, 312-330	73.3	333
59	Stretchable, elastic materials and devices for solar energy conversion. *Energy and Environmental Science*, **2011**, 4, 3314	35.4	322
58	Quadruple H-Bonding Cross-Linked Supramolecular Polymeric Materials as Substrates for Stretchable, Antitearing, and Self-Healable Thin Film Electrodes. *Journal of the American Chemical Society*, **2018**, 140, 5280-5289	16.4	312
57	A flexible bimodal sensor array for simultaneous sensing of pressure and temperature. *Advanced Materials*, **2014**, 26, 796-804	24	312

56	Soft and elastic hydrogel-based microelectronics for localized low-voltage neuromodulation. *Nature Biomedical Engineering*, **2019**, 3, 58-68	19	284
55	A stretchable and biodegradable strain and pressure sensor for orthopaedic application. *Nature Electronics*, **2018**, 1, 314-321	28.4	275
54	Molecular design for electrolyte solvents enabling energy-dense and long-cycling lithium metal batteries. *Nature Energy*, **2020**, 5, 526-533	62.3	258
53	A wireless body area sensor network based on stretchable passive tags. *Nature Electronics*, **2019**, 2, 361-368	28.4	258
52	High-Performance Lithium Metal Negative Electrode with a Soft and Flowable Polymer Coating. *ACS Energy Letters*, **2016**, 1, 1247-1255	20.1	218
51	Multifunctional materials for implantable and wearable photonic healthcare devices. *Nature Reviews Materials*, **2020**, 5, 149-165	73.3	206
50	Effects of Polymer Coatings on Electrodeposited Lithium Metal. *Journal of the American Chemical Society*, **2018**, 140, 11735-11744	16.4	204
49	3D Porous Sponge-Inspired Electrode for Stretchable Lithium-Ion Batteries. *Advanced Materials*, **2016**, 28, 3578-83	24	199
48	Concentrated mixed cation acetate "water-in-salt" solutions as green and low-cost high voltage electrolytes for aqueous batteries. *Energy and Environmental Science*, **2018**, 11, 2876-2883	35.4	198
47	Mechanically tunable conductive interpenetrating network hydrogels that mimic the elastic moduli of biological tissue. *Nature Communications*, **2018**, 9, 2740	17.4	194
46	Fast and reversible thermoresponsive polymer switching materials for safer batteries. *Nature Energy*, **2016**, 1,	62.3	190
45	Materials and structural designs of stretchable conductors. *Chemical Society Reviews*, **2019**, 48, 2946-2966	58.5	189
44	Stretchable temperature-sensing circuits with strain suppression based on carbon nanotube transistors. *Nature Electronics*, **2018**, 1, 183-190	28.4	180
43	High-Areal-Capacity Silicon Electrodes with Low-Cost Silicon Particles Based on Spatial Control of Self-Healing Binder. *Advanced Energy Materials*, **2015**, 5, 1401826	21.8	166
42	A Stretchable Graphitic Carbon/Si Anode Enabled by Conformal Coating of a Self-Healing Elastic Polymer. *Advanced Materials*, **2016**, 28, 2455-61	24	163
41	Thermodynamically stable whilst kinetically labile coordination bonds lead to strong and tough self-healing polymers. *Nature Communications*, **2019**, 10, 1164	17.4	155
40	Ionically Conductive Self-Healing Binder for Low Cost Si Microparticles Anodes in Li-Ion Batteries. *Advanced Energy Materials*, **2018**, 8, 1703138	21.8	153
39	Artificial multimodal receptors based on ion relaxation dynamics. *Science*, **2020**, 370, 961-965	33.3	141

38	Decoupling of mechanical properties and ionic conductivity in supramolecular lithium ion conductors. *Nature Communications*, **2019**, 10, 5384	17.4	126
37	Stretchable Lithium-Ion Batteries Enabled by Device-Scaled Wavy Structure and Elastic-Sticky Separator. *Advanced Energy Materials*, **2017**, 7, 1701076	21.8	120
36	Stretchable electrochemical energy storage devices. *Chemical Society Reviews*, **2020**, 49, 4466-4495	58.5	110
35	Stretchable and ultraflexible organic electronics. *MRS Bulletin*, **2017**, 42, 93-97	3.2	97
34	Crosslinked Poly(tetrahydrofuran) as a Loosely Coordinating Polymer Electrolyte. *Advanced Energy Materials*, **2018**, 8, 1800703	21.8	95
33	Bring on the bodyNET. *Nature*, **2017**, 549, 328-330	50.4	90
32	A New Class of Ionically Conducting Fluorinated Ether Electrolytes with High Electrochemical Stability. *Journal of the American Chemical Society*, **2020**, 142, 7393-7403	16.4	89
31	A Dual-Crosslinking Design for Resilient Lithium-Ion Conductors. *Advanced Materials*, **2018**, 30, e1804142	24	80
30	The Effects of Cross-Linking in a Supramolecular Binder on Cycle Life in Silicon Microparticle Anodes. *ACS Applied Materials & Interfaces*, **2016**, 8, 2318-24	9.5	73
29	Tortuosity Effects in Lithium-Metal Host Anodes. *Joule*, **2020**, 4, 938-952	27.8	69
28	Enabling Deformable and Stretchable Batteries. *Advanced Energy Materials*, **2020**, 10, 2001424	21.8	58
27	Design Principles of Artificial Solid Electrolyte Interphases for Lithium-Metal Anodes. *Cell Reports Physical Science*, **2020**, 1, 100119	6.1	58
26	Nonpolar Alkanes Modify Lithium-Ion Solvation for Improved Lithium Deposition and Stripping. *Advanced Energy Materials*, **2019**, 9, 1902116	21.8	49
25	Rational solvent molecule tuning for high-performance lithium metal battery electrolytes. *Nature Energy*, **2022**, 7, 94-106	62.3	49
24	Corrosion of lithium metal anodes during calendar ageing and its microscopic origins. *Nature Energy* , **2021**, 6, 487-494	62.3	49
23	Electrode Design with Integration of High Tortuosity and Sulfur-Philicity for High-Performance Lithium-Sulfur Battery. *Matter*, **2020**, 2, 1605-1620	12.7	48
22	Polymers in Lithium-Ion and Lithium Metal Batteries. *Advanced Energy Materials*, **2021**, 11, 2003239	21.8	45
21	Assembly of viral hydrogels for three-dimensional conducting nanocomposites. *Advanced Materials*, **2014**, 26, 5101-7	24	44

20	Capturing the swelling of solid-electrolyte interphase in lithium metal batteries.. *Science*, **2022**, 375, 66-70	39.3	40
19	Steric Effect Tuned Ion Solvation Enabling Stable Cycling of High-Voltage Lithium Metal Battery. *Journal of the American Chemical Society*, **2021**, 143, 18703-18713	16.4	40
18	Standalone real-time health monitoring patch based on a stretchable organic optoelectronic system. *Science Advances*, **2021**, 7,	14.3	40
17	Dual-Solvent Li-Ion Solvation Enables High-Performance Li-Metal Batteries. *Advanced Materials*, **2021**, 33, e2008619	24	39
16	High-Transconductance Stretchable Transistors Achieved by Controlled Gold Microcrack Morphology. *Advanced Electronic Materials*, **2019**, 5, 1900347	6.4	33
15	A design strategy for high mobility stretchable polymer semiconductors. *Nature Communications*, **2021**, 12, 3572	17.4	27
14	Efficient Lithium Metal Cycling over a Wide Range of Pressures from an Anion-Derived Solid-Electrolyte Interphase Framework. *ACS Energy Letters*, **2021**, 6, 816-825	20.1	25
13	A Cation-Tethered Flowable Polymeric Interface for Enabling Stable Deposition of Metallic Lithium. *Journal of the American Chemical Society*, **2020**, 142, 21393-21403	16.4	24
12	Biomimetic Impact Protective Supramolecular Polymeric Materials Enabled by Quadruple H-Bonding. *Journal of the American Chemical Society*, **2021**, 143, 1162-1170	16.4	24
11	Enhanced Cycling Stability of Sulfur Electrodes through Effective Binding of Pyridine-Functionalized Polymer. *ACS Energy Letters*, **2017**, 2, 2454-2462	20.1	22
10	Potentiometric Measurement to Probe Solvation Energy and Its Correlation to Lithium Battery Cyclability. *Journal of the American Chemical Society*, **2021**, 143, 10301-10308	16.4	21
9	Liquid electrolyte: The nexus of practical lithium metal batteries. *Joule*, **2022**,	27.8	19
8	F4-TCNQ as an Additive to Impart Stretchable Semiconductors with High Mobility and Stability. *Advanced Electronic Materials*, **2020**, 6, 2000251	6.4	18
7	Concentration and velocity profiles in a polymeric lithium-ion battery electrolyte. *Energy and Environmental Science*, **2020**, 13, 4312-4321	35.4	17
6	A Design Strategy for Intrinsically Stretchable High-Performance Polymer Semiconductors: Incorporating Conjugated Rigid Fused-Rings with Bulky Side Groups. *Journal of the American Chemical Society*, **2021**, 143, 11679-11689	16.4	16
5	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
4	Reprocessable and Recyclable Polymer Network Electrolytes via Incorporation of Dynamic Covalent Bonds. *Chemistry of Materials*, **2022**, 34, 2393-2399	9.6	7
3	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

2	Analysis of Photothermal Release of Oligonucleotides from Hollow Gold Nanospheres by Surface-Enhanced Raman Scattering. *Journal of Physical Chemistry C*, **2016**, 120, 20677-20683	3.8	6
1	Effects of Polymer Coating Mechanics at Solid-Electrolyte Interphase for Stabilizing Lithium Metal Anodes. *Advanced Energy Materials*, **2022**, 12, 2103187	21.8	3