Fikile R Brushett

List of Publications by Year in Descending Order

103 papers	4,896 citations	39 h-index	69 g-index
134 ext. papers	6,173 ext. citations	8.5 avg, IF	6.17 L-index

#	Paper	IF	Citations
103	Untapped Potential: The Need and Opportunity for High-Voltage Aqueous Redox Flow Batteries. *ACS Energy Letters*, **2022**, 7, 659-667	20.1	1
102	Combining electrochemical and imaging analyses to understand the effect of electrode microstructure and electrolyte properties on redox flow batteries. *Applied Energy*, **2022**, 306, 117678	10.7	0
101	Exploration of reduced graphene oxide microparticles as electrocatalytic materials in vanadium redox flow batteries. *Journal of Energy Storage*, **2022**, 50, 104192	7.8	0
100	Synthesis and Characterization of Lithium-Conducting Composite Polymer-Ceramic Membranes for Use in Nonaqueous Redox Flow Batteries. *ACS Applied Materials & Interfaces*, **2021**, 13, 53746-53757	9.5	1
99	Using voltammetry augmented with physics-based modeling and Bayesian hypothesis testing to identify analytes in electrolyte solutions. *Journal of Electroanalytical Chemistry*, **2021**, 115751	4.1	2
98	Non-Solvent Induced Phase Separation Enables Designer Redox Flow Battery Electrodes. *Advanced Materials*, **2021**, 33, e2006716	24	5
97	Too Much of a Good Thing? Assessing Performance Tradeoffs of Two-Electron Compounds for Redox Flow Batteries. *Journal of the Electrochemical Society*, **2021**, 168, 050501	3.9	2
96	Redox Flow Batteries: Non-Solvent Induced Phase Separation Enables Designer Redox Flow Battery Electrodes (Adv. Mater. 16/2021). *Advanced Materials*, **2021**, 33, 2170126	24	
95	Leveraging Neural Networks and Genetic Algorithms to Refine Electrode Properties in Redox Flow Batteries. *Journal of the Electrochemical Society*, **2021**, 168, 050547	3.9	0
94	Assessing the Design and Operation of Redox Flow Batteries through Levelized Cost Analysis. *ECS Meeting Abstracts*, **2021**, MA2021-01, 223-223	0	
93	(Student Battery Slam Best Presentation Award Winner) Combining Experimentation and Computation for Accelerated Understanding of Electrode Morphology in Redox Flow Batteries. *ECS Meeting Abstracts*, **2021**, MA2021-01, 266-266	0	
92	Comparison of Separators vs Membranes in Nonaqueous Redox Flow Battery Electrolytes Containing Small Molecule Active Materials. *ACS Applied Energy Materials*, **2021**, 4, 5443-5451	6.1	5
91	Fabrication of high surface area ribbon electrodes for use in redox flow batteries via coaxial electrospinning. *Journal of Energy Storage*, **2021**, 33, 102079	7.8	6
90	Assessing capacity loss remediation methods for asymmetric redox flow battery chemistries using levelized cost of storage. *Journal of Power Sources*, **2021**, 506, 230085	8.9	3
89	Energy storage emerging: A perspective from the Joint Center for Energy Storage Research. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 12550-12557	11.5	103
88	On Lifetime and Cost of Redox-Active Organics for Aqueous Flow Batteries. *ACS Energy Letters*, **2020**, 5, 879-884	20.1	55
87	Exploration of Biomass-Derived Activated Carbons for Use in Vanadium Redox Flow Batteries. *ACS Sustainable Chemistry and Engineering*, **2020**, 8, 9472-9482	8.3	9

86	Small-Scale, Low-Cost Flow Cell Platform for Rapid Characterization of Redox Flow Battery Materials. *ECS Meeting Abstracts*, **2020**, MA2020-02, 2674-2674	0	
85	Comparing Physical and Electrochemical Properties of Different Weave Patterns for Carbon Cloth Electrodes in Redox Flow Batteries. *Journal of Electrochemical Energy Conversion and Storage*, **2020**, 17,	2	8
84	Editors□Choice□looded by Success: On the Role of Electrode Wettability in CO2 Electrolyzers that Generate Liquid Products. *Journal of the Electrochemical Society*, **2020**, 167, 124521	3.9	17
83	A Method for Evaluating Soluble Redox Couple Stability Using Microelectrode Voltammetry. *Journal of the Electrochemical Society*, **2020**, 167, 160513	3.9	6
82	Understanding the Impact of Convective Transport on Intercalation Batteries Through Dimensional Analysis. *Journal of the Electrochemical Society*, **2020**, 167, 140551	3.9	1
81	An investigation on the impact of halidization on substituted dimethoxybenzenes. *Electrochimica Acta*, **2020**, 335, 135580	6.7	2
80	Investigating Electrode Flooding in a Flowing Electrolyte, Gas-Fed Carbon Dioxide Electrolyzer. *ChemSusChem*, **2020**, 13, 400-411	8.3	100
79	The impact of bulk electrolysis cycling conditions on the perceived stability of redox active materials. *Electrochemistry Communications*, **2020**, 111, 106625	5.1	9
78	Understanding the role of the porous electrode microstructure in redox flow battery performance using an experimentally validated 3D pore-scale lattice Boltzmann model. *Journal of Power Sources*, **2020**, 447, 227249	8.9	33
77	A General Technoeconomic Model for Evaluating Emerging Electrolytic Processes. *Energy Technology*, **2020**, 8, 1900994	3.5	20
76	Data-driven electrode parameter identification for vanadium redox flow batteries through experimental and numerical methods. *Applied Energy*, **2020**, 279, 115530	10.7	8
75	Modelling of redox flow battery electrode processes at a range of length scales: a review. *Sustainable Energy and Fuels*, **2020**, 4, 5433-5468	5.8	18
74	Ultrathin Conformal oCVD PEDOT Coatings on Carbon Electrodes Enable Improved Performance of Redox Flow Batteries. *Advanced Materials Interfaces*, **2020**, 7, 2000855	4.6	13
73	Assessing the levelized cost of vanadium redox flow batteries with capacity fade and rebalancing. *Journal of Power Sources*, **2020**, 460, 227958	8.9	22
72	Investigating the factors that influence resistance rise of PIM-1 membranes in nonaqueous electrolytes. *Electrochemistry Communications*, **2019**, 107, 106530	5.1	6
71	How a cofactor-free protein environment lowers the barrier to O reactivity. *Journal of Biological Chemistry*, **2019**, 294, 3661-3669	5.4	2
70	Perfunctionalized Dodecaborate Clusters as Stable Metal-Free Active Materials for Charge Storage. *ACS Applied Energy Materials*, **2019**, 2, 4907-4913	6.1	11
69	Dimerization of 9,10-anthraquinone-2,7-Disulfonic acid (AQDS). *Electrochimica Acta*, **2019**, 317, 478-485	6.7	28

68	Tailoring Two-Electron-Donating Phenothiazines To Enable High-Concentration Redox Electrolytes for Use in Nonaqueous Redox Flow Batteries. *Chemistry of Materials*, **2019**, 31, 4353-4363	9.6	59
67	Electroreduction of carbon dioxide to formate at high current densities using tin and tin oxide gas diffusion electrodes. *Journal of Applied Electrochemistry*, **2019**, 49, 917-928	2.6	25
66	Computational Evidence for Kinetically Controlled Radical Coupling during Lignification. *ACS Sustainable Chemistry and Engineering*, **2019**, 7, 13270-13277	8.3	9
65	Exploring the Role of Electrode Microstructure on the Performance of Non-Aqueous Redox Flow Batteries. *Journal of the Electrochemical Society*, **2019**, 166, A2230-A2241	3.9	52
64	Lignin-KMC: A Toolkit for Simulating Lignin Biosynthesis. *ACS Sustainable Chemistry and Engineering* , **2019**, 7, 18313-18322	8.3	17
63	A One-Dimensional Stack Model for Redox Flow Battery Analysis and Operation. *Batteries*, **2019**, 5, 25	5.7	15
62	Engineering porous electrodes for next-generation redox flow batteries: recent progress and opportunities. *Current Opinion in Electrochemistry*, **2019**, 18, 113-122	7.2	20
61	Pulse Plating of Copper onto Gas Diffusion Layers for the Electroreduction of Carbon Dioxide. *MRS Advances*, **2018**, 3, 1277-1284	0.7	4
60	Quantifying the impact of viscosity on mass-transfer coefficients in redox flow batteries. *Journal of Power Sources*, **2018**, 399, 133-143	8.9	32
59	Emerging opportunities for electrochemical processing to enable sustainable chemical manufacturing. *Current Opinion in Chemical Engineering*, **2018**, 20, 159-167	5.4	39
58	Estimating the cost of organic battery active materials: a case study on anthraquinone disulfonic acid. *Translational Materials Research*, **2018**, 5, 034001		32
57	Interactions between Lithium Growths and Nanoporous Ceramic Separators. *Joule*, **2018**, 2, 2434-2449	27.8	112
56	The Joint Center for Energy Storage Research: A New Paradigm of Research, Development, and Demonstration. *Advances in Electrochemical Science and Engineering*, **2018**, 7-40		
55	Elucidating the Nuanced Effects of Thermal Pretreatment on Carbon Paper Electrodes for Vanadium Redox Flow Batteries. *ACS Applied Materials & Interfaces*, **2018**, 10, 44430-44442	9.5	52
54	Pulsed Electrodeposition of Tin Electrocatalysts onto Gas Diffusion Layers for Carbon Dioxide Reduction to Formate. *MRS Advances*, **2017**, 2, 451-458	0.7	17
53	Feasibility of a Supporting-Salt-Free Nonaqueous Redox Flow Battery Utilizing Ionic Active Materials. *ChemSusChem*, **2017**, 10, 2080-2088	8.3	15
52	Wine-Dark Sea: An Organic Flow Battery: Storing Negative Charge in 2,1,3-Benzothiadiazole Radicals Leads to Improved Cyclability. *ACS Energy Letters*, **2017**, 2, 1156-1161	20.1	121
51	Innentitelbild: A Membrane-Free Neutral pH Formate Fuel Cell Enabled by a Selective Nickel Sulfide Oxygen Reduction Catalyst (Angew. Chem. 26/2017). *Angewandte Chemie*, **2017**, 129, 7428-7428	3.6	

50	Concentration-Dependent Dimerization of Anthraquinone Disulfonic Acid and Its Impact on Charge Storage. *Chemistry of Materials*, **2017**, 29, 4801-4810	9.6	77
49	A Membrane-Free Neutral pH Formate Fuel Cell Enabled by a Selective Nickel Sulfide Oxygen Reduction Catalyst. *Angewandte Chemie - International Edition*, **2017**, 56, 7496-7499	16.4	33
48	An investigation of 2,5-di-tertbutyl-1,4-bis(methoxyethoxy)benzene in ether-based electrolytes. *Electrochimica Acta*, **2017**, 246, 251-258	6.7	10
47	Engineering radical polymer electrodes for electrochemical energy storage. *Journal of Power Sources*, **2017**, 352, 226-244	8.9	58
46	A stable two-electron-donating phenothiazine for application in nonaqueous redox flow batteries. *Journal of Materials Chemistry A*, **2017**, 5, 24371-24379	13	62
45	Air-Breathing Aqueous Sulfur Flow Battery for Ultralow-Cost Long-Duration Electrical Storage. *Joule*, **2017**, 1, 306-327	27.8	101
44	Early Stage Anodic Instability of Glassy Carbon Electrodes in Propylene Carbonate Solvent Containing Lithium Hexafluorophosphate. *Langmuir*, **2017**, 33, 11911-11918	4	3
43	Evaluation of Electrospun Fibrous Mats Targeted for Use as Flow Battery Electrodes. *Journal of the Electrochemical Society*, **2017**, 164, A2038-A2048	3.9	42
42	Quantifying Mass Transfer Rates in Redox Flow Batteries. *Journal of the Electrochemical Society*, **2017**, 164, E3265-E3275	3.9	62
41	Towards Low Resistance Nonaqueous Redox Flow Batteries. *Journal of the Electrochemical Society*, **2017**, 164, A2487-A2499	3.9	39
40	Toward an Inexpensive Aqueous Polysulfide–Polyiodide Redox Flow Battery. *Industrial & Engineering Chemistry Research*, **2017**, 56, 9783-9792	3.9	33
39	The Critical Role of Supporting Electrolyte Selection on Flow Battery Cost. *Journal of the Electrochemical Society*, **2017**, 164, A3883-A3895	3.9	24
38	Transport Property Requirements for Flow Battery Separators. *Journal of the Electrochemical Society*, **2016**, 163, A5029-A5040	3.9	75
37	A symmetric organic-based nonaqueous redox flow battery and its state of charge diagnostics by FTIR. *Journal of Materials Chemistry A*, **2016**, 4, 5448-5456	13	130
36	Transition of lithium growth mechanisms in liquid electrolytes. *Energy and Environmental Science*, **2016**, 9, 3221-3229	35.4	704
35	High current density, long duration cycling of soluble organic active species for non-aqueous redox flow batteries. *Energy and Environmental Science*, **2016**, 9, 3531-3543	35.4	138
34	4-acetamido-2,2,6,6-tetramethylpiperidine-1-oxyl as a model organic redox active compound for nonaqueous flow batteries. *Journal of Power Sources*, **2016**, 327, 151-159	8.9	74
33	The lightest organic radical cation for charge storage in redox flow batteries. *Scientific Reports*, **2016**, 6, 32102	4.9	40

32	An Investigation of the Ionic Conductivity and Species Crossover of Lithiated Nafion 117 in Nonaqueous Electrolytes. *Journal of the Electrochemical Society*, **2016**, 163, A5253-A5262	3.9	52
31	Electrocatalytic Hydrogenation of Oxygenates using Earth-Abundant Transition-Metal Nanoparticles under Mild Conditions. *ChemSusChem*, **2016**, 9, 1904-10	8.3	27
30	Synthesis of Pyridine and Pyrazine BF3 Complexes and Their Characterization in Solution and Solid State. *Journal of Physical Chemistry C*, **2016**, 120, 8461-8471	3.8	18
29	Tuning the Stability of Organic Active Materials for Nonaqueous Redox Flow Batteries via Reversible, Electrochemically Mediated Li+ Coordination. *Chemistry of Materials*, **2016**, 28, 2529-2539	9.6	24
28	Recent advances in molecular engineering of redox active organic molecules for nonaqueous flow batteries. *Current Opinion in Chemical Engineering*, **2016**, 13, 45-52	5.4	74
27	Performance and cost characteristics of multi-electron transfer, common ion exchange non-aqueous redox flow batteries. *Journal of Power Sources*, **2016**, 327, 681-692	8.9	46
26	Cost-driven materials selection criteria for redox flow battery electrolytes. *Journal of Power Sources*, **2016**, 330, 261-272	8.9	82
25	Molecular Dynamics Modeling of the Conductivity of Lithiated Nafion Containing Nonaqueous Solvents. *Journal of the Electrochemical Society*, **2016**, 163, A2232-A2239	3.9	11
24	Recent Developments and Trends in Redox Flow Batteries. *Green Energy and Technology*, **2015**, 673-712	0.6	12
23	Voltammetry study of quinoxaline in aqueous electrolytes. *Electrochimica Acta*, **2015**, 180, 695-704	6.7	40
22	A subtractive approach to molecular engineering of dimethoxybenzene-based redox materials for non-aqueous flow batteries. *Journal of Materials Chemistry A*, **2015**, 3, 14971-14976	13	72
21	BF3-promoted electrochemical properties of quinoxaline in propylene carbonate. *RSC Advances*, **2015**, 5, 18822-18831	3.7	25
20	Full-field synchrotron tomography of nongraphitic foam and laminate anodes for lithium-ion batteries. *ACS Applied Materials & Interfaces*, **2014**, 6, 4524-34	9.5	14
19	Reduction potential predictions of some aromatic nitrogen-containing molecules. *RSC Advances*, **2014**, 4, 57442-57451	3.7	44
18	Electrolyte Development for Non-Aqueous Redox Flow Batteries Using a High-Throughput Screening Platform. *Journal of the Electrochemical Society*, **2014**, 161, A1905-A1914	3.9	38
17	Pathways to low-cost electrochemical energy storage: a comparison of aqueous and nonaqueous flow batteries. *Energy and Environmental Science*, **2014**, 7, 3459-3477	35.4	415
16	The Effects of Catalyst Layer Deposition Methodology on Electrode Performance. *Advanced Energy Materials*, **2013**, 3, 589-599	21.8	148
15	In-situ measurement of ethanol tolerance in an operating fuel cell. *International Journal of Hydrogen Energy*, **2013**, 38, 8980-8991	6.7	5

14	Design rules for electrode arrangement in an air-breathing alkaline direct methanol laminar flow fuel cell. *Journal of Power Sources*, **2012**, 218, 28-33	8.9	38
13	An All-Organic Non-aqueous Lithium-Ion Redox Flow Battery. *Advanced Energy Materials*, **2012**, 2, 1390-1396	12.8	294
12	Analysis of Pt/C electrode performance in a flowing-electrolyte alkaline fuel cell. *International Journal of Hydrogen Energy*, **2012**, 37, 2559-2570	6.7	40
11	Combining Structural and Electrochemical Analysis of Electrodes Using Micro-Computed Tomography and a Microfluidic Fuel Cell. *Journal of the Electrochemical Society*, **2012**, 159, B292-B298	3.9	36
10	Carbonate resilience of flowing electrolyte-based alkaline fuel cells. *Journal of Power Sources*, **2011** , 196, 1762-1768	8.9	74
9	Investigation of Pt, Pt[sub 3]Co, and Pt[sub 3]Co/Mo Cathodes for the ORR in a Microfluidic H[sub 2]/O[sub 2] Fuel Cell. *Journal of the Electrochemical Society*, **2010**, 157, B837	3.9	22
8	A carbon-supported copper complex of 3,5-diamino-1,2,4-triazole as a cathode catalyst for alkaline fuel cell applications. *Journal of the American Chemical Society*, **2010**, 132, 12185-7	16.4	73
7	New Concepts in the Chemistry and Engineering of Low-Temperature Fuel Cells **2010**, 565-610		
6	On the performance of membraneless laminar flow-based fuel cells. *Journal of Power Sources*, **2010** , 195, 3569-3578	8.9	126
5	Alkaline Microfluidic Hydrogen-Oxygen Fuel Cell as a Cathode Characterization Platform. *Journal of the Electrochemical Society*, **2009**, 156, B565	3.9	57
4	Investigation of fuel and media flexible laminar flow-based fuel cells. *Electrochimica Acta*, **2009**, 54, 7099-7105	3.7	75
3	Vapor Feed Direct Methanol Fuel Cell with Flowing Electrolyte. *ECS Transactions*, **2007**, 11, 1419-1424	1	2
2	RNA interference of sialidase improves glycoprotein sialic acid content consistency. *Biotechnology and Bioengineering*, **2006**, 95, 106-19	4.9	81
1	A generalized reduced fluid dynamic model for flow fields and electrodes in redox flow batteries. *AICHE Journal*,	3.6	1