Matthew M Mench

List of Publications by Year
in descending order

54	4,733	186265 28	182427 51
papers	citations	h-index	g-index

56	56	56	4484
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Redox flow batteries: a review. Journal of Applied Electrochemistry, 2011, 41, 1137-1164.	2.9	1,621
2	A Critical Review of Modeling Transport Phenomena in Polymer-Electrolyte Fuel Cells. Journal of the Electrochemical Society, 2014, 161, F1254-F1299.	2.9	444
3	Impact of initial biofilm growth on the anode impedance of microbial fuel cells. Biotechnology and Bioengineering, 2008, 101, 101-108.	3.3	200
4	High performance electrodes in vanadium redox flow batteries through oxygen-enriched thermal activation. Journal of Power Sources, 2015, 294, 333-338.	7.8	189
5	Discovery of true electrochemical reactions for ultrahigh catalyst mass activity in water splitting. Science Advances, 2016, 2, e1600690.	10.3	161
6	Investigation of thin/well-tunable liquid/gas diffusion layers exhibiting superior multifunctional performance in low-temperature electrolytic water splitting. Energy and Environmental Science, 2017, 10, 166-175.	30.8	154
7	Influence of architecture and material properties on vanadium redox flow battery performance. Journal of Power Sources, 2016, 302, 369-377.	7.8	147
8	Impact of channel wall hydrophobicity on through-plane water distribution and flooding behavior in a polymer electrolyte fuel cell. Electrochimica Acta, 2010, 55, 2734-2745.	5.2	142
9	Oxygen transport resistance correlated to liquid water saturation in the gas diffusion layer of PEM fuel cells. International Journal of Heat and Mass Transfer, 2014, 71, 585-592.	4.8	131
10	Molecular dynamic simulation of aluminumâ€“water reactions using the ReaxFF reactive force field. International Journal of Hydrogen Energy, 2011, 36, 5828-5835.	7.1	120
11	Architecture for improved mass transport and system performance in redox flow batteries. Journal of Power Sources, 2017, 351, 96-105.	7.8	118
12	Investigation of macro- and micro-porous layer interaction in polymer electrolyte fuel cells. International Journal of Hydrogen Energy, 2008, 33, 3351-3367.	7.1	113
13	Characterization of Microbial Fuel Cells at Microbially and Electrochemically Meaningful Time scales. Environmental Science & Technology, 2011, 45, 2435-2441.	10.0	111
14	Impedance Characteristics and Polarization Behavior of a Microbial Fuel Cell in Response to Short-Term Changes in Medium pH. Environmental Science & Technology, 2011, 45, 9069-9074.	10.0	104
15	Thin film temperature sensor for real-time measurement of electrolyte temperature in a polymer electrolyte fuel cell. Sensors and Actuators A: Physical, 2006, 125, 170-177.	4.1	100
16	Critical Reviewâ€"Experimental Diagnostics and Material Characterization Techniques Used on Redox Flow Batteries. Journal of the Electrochemical Society, 2018, 165, A970-A1010.	2.9	87
17	Elucidating effects of cell architecture, electrode material, and solution composition on overpotentials in redox flow batteries. Electrochimica Acta, 2017, 229, 261-270.	5.2	85
18	Resolving Losses at the Negative Electrode in All-Vanadium Redox Flow Batteries Using Electrochemical Impedance Spectroscopy. Journal of the Electrochemical Society, 2014, 161, A981-A988.	2.9	82

#	Article	IF	Citations
19	One-Dimensional Transient Model for Frost Heave in Polymer Electrolyte Fuel Cells. Journal of the Electrochemical Society, 2006, 153, A1724.	2.9	57
20	Characteristic Behavior of Polymer Electrolyte Fuel Cell Resistance during Cold Start. Journal of the Electrochemical Society, 2008, 155, B1145.	2.9	49
21	Effect of material properties on evaporative water removal from polymer electrolyte fuel cell diffusion media. Journal of Power Sources, 2010, 195, 6748-6757.	7.8	45
22	Isolation of transport mechanisms in PEFCs using high resolution neutron imaging. International Journal of Hydrogen Energy, 2014, 39, 3387-3396.	7.1	45
23	Fundamental characterization of evaporative water removal from fuel cell diffusion media. Journal of Power Sources, 2010, 195, 3858-3869.	7.8	38
24	Kinetic enhancement via passive deposition of carbon-based nanomaterials in vanadium redox flow batteries. Journal of Power Sources, 2017, 366, 241-248.	7.8	36
25	Multi-variable mathematical models for the air-cathode microbial fuel cell system. Journal of Power Sources, 2016, 314, 49-57.	7.8	35
26	Modeling and validation of single-chamber microbial fuel cell cathode biofilm growth and response to oxidant gas composition. Journal of Power Sources, 2016, 328, 385-396.	7.8	34
27	Measurement of capillary pressure in fuel cell diffusion media, micro-porous layers, catalyst layers, and interfaces. Journal of Power Sources, 2014, 271, 180-186.	7.8	31
28	1D Transient Model for Frost Heave in Polymer Electrolyte Fuel Cells. Journal of the Electrochemical Society, 2007, 154, B1024.	2.9	29
29	Coupled effects of flow field geometry and diffusion media material structure on evaporative water removal from polymer electrolyte fuel cells. International Journal of Hydrogen Energy, 2010, 35, 12329-12340.	7.1	29
30	Investigation of the role of the micro-porous layer in polymer electrolyte fuel cells with hydrogen deuterium contrast neutron radiography. Physical Chemistry Chemical Physics, 2012, 14, 4296.	2.8	27
31	Full cell simulation and the evaluation of the buffer system on air-cathode microbial fuel cell. Journal of Power Sources, 2017, 347, 159-169.	7.8	26
32	1D Transient Model for Frost Heave in PEFCs. Journal of the Electrochemical Society, 2007, 154, B1227.	2.9	22
33	Interfacial Morphology and Contact Resistance Model for Polymer Electrolyte Fuel Cells. ECS Transactions, 2009, 25, 15-27.	0.5	14
34	Increased Performance of PEFCs with Engineered Mass-Transport Pathways. ECS Transactions, 2011, 41, 569-581.	0.5	13
35	A combined path-percolation â€“ Lattice-Boltzmann model applied to multiphase mass transfer in porous media. International Journal of Heat and Mass Transfer, 2016, 93, 257-272.	4.8	12
36	Freeze-Induced Damage and Purge Based Mitigation in Polymer Electrolyte Fuel Cells. ECS Transactions, 2007, 11, 577-586.	0.5	11

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37	Application of path-percolation theory and Lattice-Boltzmann method to investigate structureâ€“property relationships in porous media. International Journal of Heat and Mass Transfer, 2015, 86, 101-112.	4.8	10
38	PART 1- techno-economic analysis of a grid scale Ground-Level Integrated Diverse Energy Storage (GLIDES) technology. Journal of Energy Storage, 2019, 25, 100792.	8.1	9
39	Mass transport limitations in polymer electrolyte water electrolyzers using spatially-resolved current measurement. Journal of Power Sources, 2022, 542, 231749.	7.8	7
40	Architecture-Based Control of Temperature Gradient-Driven Water Transport in Polymer Electrolyte Fuel Cells. Journal of the Electrochemical Society, 2020, 167, 104504.	2.9	5
41	Computational Model of Physical Damage during Freeze/Thaw of PEFCs. ECS Transactions, 2006, 3, 897-907.	0.5	4
42	Alternative analytical analysis for improved Loschmidt diffusion cell. International Journal of Heat and Mass Transfer, 2013, 65, 883-892.	4.8	4
43	Outstanding Student/Post-doc Presentation Award Recipient: 1-D Transient Model of Shutdown to a Frozen State in a Polymer Electrolyte Fuel Cell. ECS Transactions, 2006, 1, 415-434.	0.5	3
44	Cold Start Analysis of a Polymer Electrolyte Fuel Cell. ECS Transactions, 2007, 11, 553-563.	0.5	3
45	Investigation of the Impact of the Micro-Porous Layer on the Water Distribution in the Polymer Electrolyte Fuel Cells through Hydrogen-Deuterium Contrast Neutron Radiography. ECS Transactions, 2011, 41, 513-520.	0.5	3
46	Isolation of Transport Mechanisms in PEFCs with High Resolution Neutron Imaging. ECS Transactions, 2011, 41, 329-336.	0.5	3
47	Model for Water Transport in a Polymer Electrolyte Fuel Cell after Shutdown. ECS Transactions, 2008, 13, 75-87.	0.5	2
48	Computational and Experimental Study of Convection in a Vanadium Redox Flow Battery Strip Cell Architecture. Energies, 2020, 13, 4767.	3.1	2
49	Measurement of Fuel Cell Flowfields Using Particle Image Velocimetry. ECS Transactions, 2006, 1, 571-580.	0.5	1
50	Capillary Pressure-Saturation Behavior of Carbon Paper Fuel Cell Diffusion Media: A Validated Approach. ECS Transactions, 2007, 11, 683-692.	0.5	1
51	Electrochemical sensor for detection of multiple environmental contaminants through advanced signal processing. , 2012, , .		1
52	An Artificial Neural Network for Capillary Transport Characterization of Fuel Cell Diffusion Media. ECS Transactions, 2007, 11, 675-681.	0.5	0
53	Exploration of Ultra-High Current Operation in PEFC Using a Validated Model. ECS Transactions, 2011, 41, 229-240.	0.5	0
54	A signal processing framework for simultaneous detection of multiple environmental contaminants. Measurement Science and Technology, 2013, 24, 115102.	2.6	0