Katherine E Ayers

List of Publications by Year
in descending order

70	4,021	172457	214800
papers	citations	29 h-index	47 g-index

71	71	71	4739
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Dynamic surface self-reconstruction is the key of highly active perovskite nano-electrocatalysts for water splitting. Nature Materials, 2017, 16, 925-931.	27.5	696
2	Research Advances towards Low Cost, High Efficiency PEM Electrolysis. ECS Transactions, 2010, 33, 3-15.	0.5	264
3	Pathways to electrochemical solar-hydrogen technologies. Energy and Environmental Science, 2018, 11, 2768-2783.	30.8	238
4	Perspectives on Low-Temperature Electrolysis and Potential for Renewable Hydrogen at Scale. Annual Review of Chemical and Biomolecular Engineering, 2019, 10, 219-239.	6.8	223
5	Durability of anion exchange membrane water electrolyzers. Energy and Environmental Science, 2021, 14, 3393-3419.	30.8	213
6	Earth-Abundant Oxygen Electrocatalysts for Alkaline Anion-Exchange-Membrane Water Electrolysis: Effects of Catalyst Conductivity and Comparison with Performance in Three-Electrode Cells. ACS Catalysis, 2019, 9, 7-15.	11.2	189
7	Alkaline Stability of Benzyl Trimethyl Ammonium Functionalized Polyaromatics: A Computational and Experimental Study. Chemistry of Materials, 2014, 26, 5675-5682.	6.7	152
8	Reaction mechanism for oxygen evolution on RuO2, IrO2, and RuO2@IrO2 core-shell nanocatalysts. Journal of Electroanalytical Chemistry, 2018, 819, 296-305.	3.8	141
9	In situ diagnostic techniques for characterisation of polymer electrolyte membrane water electrolysers â€“ Flow visualisation and electrochemical impedance spectroscopy. International Journal of Hydrogen Energy, 2014, 39, 4468-4482.	7.1	136
10	Nano-size IrOx catalyst of high activity and stability in PEM water electrolyzer with ultra-low iridium loading. Applied Catalysis B: Environmental, 2018, 239, 133-146.	20.2	131
11	Pathways to ultra-low platinum group metal catalyst loading in proton exchange membrane electrolyzers. Catalysis Today, 2016, 262, 121-132.	4.4	129
12	Initial Performance and Durability of Ultra-Low Loaded NSTF Electrodes for PEM Electrolyzers. Journal of the Electrochemical Society, 2012, 159, K165-K176.	2.9	128
13	Degradation of anion exchange membranes used for hydrogen production by ultrapure water electrolysis. RSC Advances, 2014, 4, 9875.	3.6	128
14	Pyrochlore electrocatalysts for efficient alkaline water electrolysis. Journal of Materials Chemistry A, 2015, 3, 10819-10828.	10.3	100
15	Chemically durable polymer electrolytes for solid-state alkaline water electrolysis. Journal of Power Sources, 2018, 375, 367-372.	7.8	94
16	Calculating the Electrochemically Active Surface Area of Iridium Oxide in Operating Proton Exchange Membrane Electrolyzers. Journal of the Electrochemical Society, 2015, 162, F1292-F1298.	2.9	88
17	The potential of proton exchange membraneâ€“based electrolysis technology. Current Opinion in Electrochemistry, 2019, 18, 9-15.	4.8	83
18	Structural basis for differing electrocatalytic water oxidation by the cubic, layered and spinel forms of lithium cobalt oxides. Energy and Environmental Science, 2016, 9, 184-192.	30.8	81

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19	Recent Advances in Cell Cost and Efficiency for PEM-Based Water Electrolysis. ECS Transactions, 2012, 41, 15-22.	0.5	77
20	Highly Active Nanoperovskite Catalysts for Oxygen Evolution Reaction: Insights into Activity and Stability of Ba_{0.5}Sr_{0.5}Co_{0.8}Fe_{0.2}O_{2+Î´} and PrBaCo₂O_{5+Î´}. Advanced Functional Materials, 2018, 28, 1804355.	14.9	63
21	Combinatorial Search for Improved Metal Oxide Oxygen Evolution Electrocatalysts in Acidic Electrolytes. ACS Combinatorial Science, 2013, 15, 82-89.	3.8	53
22	Evaluation of nitrided titanium separator plates for proton exchange membrane electrolyzer cells. Journal of Power Sources, 2014, 272, 954-960.	7.8	51
23	Characterization of Anion Exchange Membrane Technology for Low Cost Electrolysis. ECS Transactions, 2013, 45, 121-130.	0.5	49
24	Elucidating effects of catalyst loadings and porous transport layer morphologies on operation of proton exchange membrane water electrolyzers. Applied Catalysis B: Environmental, 2022, 308, 121213.	20.2	48
25	Ultralow charge-transfer resistance with ultralow Pt loading for hydrogen evolution and oxidation using Ru@Pt core-shell nanocatalysts. Scientific Reports, 2015, 5, 12220.	3.3	44
26	Interfacial analysis of a PEM electrolyzer using X-ray computed tomography. Sustainable Energy and Fuels, 2020, 4, 921-931.	4.9	44
27	Observation of Preferential Pathways for Oxygen Removal through Porous Transport Layers of Polymer Electrolyte Water Electrolyzers. IScience, 2020, 23, 101783.	4.1	39
28	(Invited) Efficient Generation of High Energy Density Fuel from Water. ECS Transactions, 2012, 41, 27-38.	0.5	35
29	Performance and durability of anion exchange membrane water electrolyzers using down-selected polymer electrolytes. Journal of Materials Chemistry A, 2021, 9, 22670-22683.	10.3	34
30	Tuning Catalyst Activation and Utilization Via Controlled Electrode Patterning for Lowâ€Loading and Highâ€Efficiency Water Electrolyzers. Small, 2022, 18, e2107745.	10.0	30
31	Electrochemical characterization of high-surface-area catalysts and other nanoscale electroactive materials at sticky-carbon electrodes. Journal of Electroanalytical Chemistry, 2002, 522, 58-65.	3.8	29
32	The Role of Electrocatalysts in the Development of Gigawatt-Scale PEM Electrolyzers. ACS Catalysis, 2022, 12, 6159-6171.	11.2	26
33	Flame-based processing as a practical approach for manufacturing hydrogen evolution electrodes. Journal of Power Sources, 2014, 271, 366-376.	7.8	22
34	Characterization of Iron(VI) Compounds and Their Discharge Products in Strongly Alkaline Electrolyte. Journal of the Electrochemical Society, 2005, 152, A467.	2.9	21
35	Controlling the Distribution of Perfluorinated Sulfonic Acid Ionomer with Elastin-like Polypeptide. ACS Applied Materials & Interfaces, 2019, 11, 43649-43658.	8.0	21
36	Exploring the Impacts of Conditioning on Proton Exchange Membrane Electrolyzers by In Situ Visualization and Electrochemistry Characterization. ACS Applied Materials & Interfaces, 2022, 14, 9002-9012.	8.0	20

#	Article	IF	Citations
37	PEM Electrolysis, a Forerunner for Clean Hydrogen. Electrochemical Society Interface, 2021, 30, 67-72.	0.4	20
38	High-performance and cost-effective membrane electrode assemblies for advanced proton exchange membrane water electrolyzers: Long-term durability assessment. International Journal of Hydrogen Energy, 2021, 46, 1526-1539.	7.1	18
39	Degradation Mechanisms in Advanced MEAs for PEM Water Electrolyzers Fabricated by Reactive Spray Deposition Technology. Journal of the Electrochemical Society, 2022, 169, 054536.	2.9	13
40	Computation and assessment of solar electrolyzer field performance: comparing coupling strategies. Sustainable Energy and Fuels, 2019, 3, 422-430.	4.9	12
41	Longâ€Term Operation of Nbâ€Coated Stainless Steel Bipolar Plates for Proton Exchange Membrane Water Electrolyzers. Advanced Energy and Sustainability Research, 2022, 3, .	5.8	8
42	Hydrogen Infrastructure Challenges and Solutions. ECS Transactions, 2012, 41, 75-83.	0.5	7
43	Determining the Electrochemically Active Area of IrO_x Powder Catalysts in an Operating Proton Exchange Membrane Electrolyzer. ECS Transactions, 2015, 69, 877-881.	0.5	6
44	PEM water electrolysis. , 2022, , 199-228.		5
45	An Electrochemical Impedance Spectroscopy Study and Two Phase Flow Analysis of the Anode of Polymer Electrolyte Membrane Water Electrolyser. ECS Transactions, 2015, 68, 117-131.	0.5	3
46	(Invited) Recycling Considerations for PEM Electrolysis Materials. ECS Meeting Abstracts, 2021, MA2021-02, 1790-1790.	0.0	2
47	Development of Recombination Layers to Reduce Gas Crossover for Proton Exchange Membrane Water Electrolyzers By Reactive Spray Deposition Technology. ECS Meeting Abstracts, 2020, MA2020-02, 2469-2469.	0.0	2
48	Impact of Membrane and Gas Diffusion Layer on AEM Electrolyzer Performance. ECS Meeting Abstracts, 2020, MA2020-02, 2446-2446.	0.0	1
49	Large Scale Energy Storage Using MW-Size PEM Electrolysis. , 2014, , .		0
50	Exploring electrochemical technology: A perspective on the ASEE/NSF small business postdoctoral research diversity fellowship. , 2014, , .		0
51	Correlating Effects of Catalyst Loading and Porous Transport Layer Morphologies on Operation of Polymer Electrolyte Water Electrolyzers. ECS Meeting Abstracts, 2021, MA2021-01, 1182-1182.	0.0	0
52	(Invited) Investigating Preferential Pathways for Oxygen Removal through Porous Transport Layers of Polymer Electrolyte Water Electrolyzer Using Operando X-Ray CT. ECS Meeting Abstracts, 2021, MA2021-01, 1186-1186.	0.0	0
53	Advanced Catalysts for the Oxygen Evolution Reaction Fabricated By Reactive Spray Deposition Technology: Degradation Mechanisms Governing the Performance Loss during the Long-Term Steady State Operation. ECS Meeting Abstracts, 2021, MA2021-01, 1185-1185.	0.0	0
54	Development of Membrane Electrode Assemblies for State-of-the-Art Anion Exchange and Proton Exchange Membrane Electrolysis. ECS Meeting Abstracts, 2019, , .	0.0	0

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55	A Tale of Two Environments: Being the Only Woman in the Room Doesnâ€™t Have to be a Negative Experience. ECS Meeting Abstracts, 2019, , .	0.0	0
56	Understanding Interfaces of PEM Electrolyzers with Operando Synchrotron X-Ray Computed Tomography and Radiography. ECS Meeting Abstracts, 2019, , .	0.0	0
57	A Pathway to Significant Reduction of Hydrogen Crossover with Pt Recombination Layer in Proton Exchange Membrane Water Electrolyzers. ECS Meeting Abstracts, 2019, , .	0.0	0
58	(Invited) HydroGEN Benchmarking: Developing Best Practices for Water Splitting Technologies. ECS Meeting Abstracts, 2019, , .	0.0	0
59	Development of Proton Exchange Membrane Water Electrolyzers with Low Catalyst Loadings and Recombination Layers By Reactive Spray Deposition Technology. ECS Meeting Abstracts, 2020, MA2020-01, 1565-1565.	0.0	0
60	(Invited) Manufacturing Challenges, Opportunities, And Successes for PEM Electrolysis at Scale. ECS Meeting Abstracts, 2021, MA2021-02, 1260-1260.	0.0	0
61	(Invited) Importance of Benchmarking and Protocol Development As Part of the Hydrogen Energy Materials Network in Advanced Water Splitting. ECS Meeting Abstracts, 2021, MA2021-02, 1359-1359.	0.0	0
62	High-Performance and Durable Membrane Electrode Assemblies Fabricated By Reactive Spray Deposition Technology for Proton Exchange Membrane Electrolyzers. ECS Meeting Abstracts, 2020, MA2020-02, 2471-2471.	0.0	0
63	Membrane Electrode Assemblies Fabricated By Reactive Spray Deposition Technology for Advanced Proton Exchange Membrane Water Electrolyzers: Study of the Degradation Mechanisms. ECS Meeting Abstracts, 2020, MA2020-02, 3634-3634.	0.0	0
64	Durability and Performance Limitations in Currently Available Alkaline Exchange Membrane Electrolysis Materials and the Relationship to Total System Cost. ECS Meeting Abstracts, 2020, MA2020-02, 2437-2437.	0.0	0
65	Performance Degradation in Alkaline-Membrane Electrolyzers. ECS Meeting Abstracts, 2020, MA2020-02, 2438-2438.	0.0	0
66	Highly Active and Durable Membrane Electrode Assemblies for Proton Exchange Membrane Water Electrolyzers Fabricated by Reactive Spray Deposition Technology. ECS Meeting Abstracts, 2021, MA2021-02, 1271-1271.	0.0	0
67	Engineering Catalysts for Anion Exchange Membrane Electrolyzer Anodes and Cathodes. ECS Meeting Abstracts, 2020, MA2020-02, 2445-2445.	0.0	0
68	(Digital Presentation) Largeâ€“Scale High-Performance Low Catalyst Loaded Membrane Electrode Assemblies for Advanced Proton Exchange Membrane Water Electrolyzers. ECS Meeting Abstracts, 2022, MA2022-01, 1520-1520.	0.0	0
69	(Invited) Manufacturing Challenges, Opportunities, and Successes for PEM Electrolysis at Scale. ECS Meeting Abstracts, 2022, MA2022-01, 1753-1753.	0.0	0
70	(Invited) Water Electrolyzers for Green Hydrogen Production - a Tutorial on Catalyst and Electrode Development for Next Generation Devices. ECS Meeting Abstracts, 2022, MA2022-01, 1336-1336.	0.0	0