Zhenye Kang

List of Publications by Year
in descending order

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60 papers	2,288 citations	185998 28 h-index	214527 47 g-index
60 all docs	60 docs citations	60 times ranked	1049 citing authors

#	Article	IF	Citations
1	Discovery of true electrochemical reactions for ultrahigh catalyst mass activity in water splitting. Science Advances, 2016, 2, e1600690.	4.7	161
2	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.	15.6	154
3	Engineering Ruthenium-Based Electrocatalysts for Effective Hydrogen Evolution Reaction. Nano-Micro Letters, 2021, 13, 160.	14.4	142
4	Novel thin/tunable gas diffusion electrodes with ultra-low catalyst loading for hydrogen evolution reactions in proton exchange membrane electrolyzer cells. Nano Energy, 2018, 47, 434-441.	8.2	118
5	Thin liquid/gas diffusion layers for high-efficiency hydrogen production from water splitting. Applied Energy, 2016, 177, 817-822.	5.1	101
6	Effects of the Transport/Catalyst Layer Interface and Catalyst Loading on Mass and Charge Transport Phenomena in Polymer Electrolyte Membrane Water Electrolysis Devices. Journal of the Electrochemical Society, 2020, 167, 064507.	1.3	90
7	In situ investigation on ultrafast oxygen evolution reactions of water splitting in proton exchange membrane electrolyzer cells. Journal of Materials Chemistry A, 2017, 5, 18469-18475.	5.2	87
8	Effects of membrane electrode assembly properties on two-phase transport and performance in proton exchange membrane electrolyzer cells. Electrochimica Acta, 2016, 188, 317-326.	2.6	85
9	Modeling of two-phase transport in proton exchange membrane electrolyzer cells for hydrogen energy. International Journal of Hydrogen Energy, 2017, 42, 4478-4489.	3.8	81
10	Bipolar plate development with additive manufacturing and protective coating for durable and high-efficiency hydrogen production. Journal of Power Sources, 2018, 396, 590-598.	4.0	74
11	Fully printed and integrated electrolyzer cells with additive manufacturing for high-efficiency water splitting. Applied Energy, 2018, 215, 202-210.	5.1	69
12	Additive manufactured bipolar plate for high-efficiency hydrogen production in proton exchange membrane electrolyzer cells. International Journal of Hydrogen Energy, 2017, 42, 14734-14740.	3.8	67
13	A novel PEMEC with 3D printed non-conductive bipolar plate for low-cost hydrogen production from water electrolysis. Energy Conversion and Management, 2019, 182, 108-116.	4.4	65
14	Effects of various parameters of different porous transport layers in proton exchange membrane water electrolysis. Electrochimica Acta, 2020, 354, 136641.	2.6	65
15	In-situ investigation of bubble dynamics and two-phase flow in proton exchange membrane electrolyzer cells. International Journal of Hydrogen Energy, 2018, 43, 11223-11233.	3.8	62
16	In-situ investigation and modeling of electrochemical reactions with simultaneous oxygen and hydrogen microbubble evolutions in water electrolysis. International Journal of Hydrogen Energy, 2019, 44, 28283-28293.	3.8	59
17	Thin film surface modifications of thin/tunable liquid/gas diffusion layers for high-efficiency proton exchange membrane electrolyzer cells. Applied Energy, 2017, 206, 983-990.	5.1	58
18	Performance Modeling and Current Mapping of Proton Exchange Membrane Electrolyzer Cells with Novel Thin/Tunable Liquid/Gas Diffusion Layers. Electrochimica Acta, 2017, 255, 405-416.	2.6	56

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19	Performance improvement of proton exchange membrane electrolyzer cells by introducing in-plane transport enhancement layers. Electrochimica Acta, 2019, 316, 43-51.	2.6	56
20	Elucidating the Role of Hydroxide Electrolyte on Anion-Exchange-Membrane Water Electrolyzer Performance. Journal of the Electrochemical Society, 2021, 168, 054522.	1.3	54
21	Developing titanium micro/nano porous layers on planar thin/tunable LGDLs for high-efficiency hydrogen production. International Journal of Hydrogen Energy, 2018, 43, 14618-14628.	3.8	52
22	Investigation of titanium liquid/gas diffusion layers in proton exchange membrane electrolyzer cells. International Journal of Green Energy, 2017, 14, 162-170.	2.1	45
23	Insights into the rapid two-phase transport dynamics in different structured porous transport layers of water electrolyzers through high-speed visualization. Journal of Power Sources, 2021, 516, 230641.	4.0	39
24	Building Electron/Proton Nanohighways for Full Utilization of Water Splitting Catalysts. Advanced Energy Materials, 2020, 10, 1903871.	10.2	38
25	Exploring and understanding the internal voltage losses through catalyst layers in proton exchange membrane water electrolysis devices. Applied Energy, 2022, 317, 119213.	5.1	36
26	Wettability effects of thin titanium liquid/gas diffusion layers in proton exchange membrane electrolyzer cells. Electrochimica Acta, 2019, 298, 704-708.	2.6	34
27	Roll-to-roll production of catalyst coated membranes for low-temperature electrolyzers. Journal of Power Sources, 2020, 479, 228819.	4.0	32
28	Tuning Catalyst Activation and Utilization Via Controlled Electrode Patterning for Lowâ€Loading and Highâ€Efficiency Water Electrolyzers. Small, 2022, 18, e2107745.	5.2	30
29	In-situ and in-operando analysis of voltage losses using sense wires for proton exchange membrane water electrolyzers. Journal of Power Sources, 2021, 481, 229012.	4.0	29
30	Study on corrosion migrations within catalyst-coated membranes of proton exchangeÂmembrane electrolyzer cells. International Journal of Hydrogen Energy, 2017, 42, 27343-27349.	3.8	24
31	An inkjet-printed capacitive sensor for water level or quality monitoring: investigated theoretically and experimentally. Journal of Materials Chemistry A, 2017, 5, 17841-17847.	5.2	24
32	Discovering and Demonstrating a Novel High-Performing 2D-Patterned Electrode for Proton-Exchange Membrane Water Electrolysis Devices. ACS Applied Materials & Interfaces, 2022, 14, 2335-2342.	4.0	22
33	Performance improvement induced by membrane treatment in proton exchange membrane water electrolysis cells. International Journal of Hydrogen Energy, 2022, 47, 5807-5816.	3.8	22
34	Mathematical modeling of novel porous transport layer architectures for proton exchange membrane electrolysis cells. International Journal of Hydrogen Energy, 2021, 46, 25341-25354.	3.8	21
35	PEM electrolyzer characterization with carbon-based hardware and material sets. Electrochemistry Communications, 2021, 124, 106941.	2.3	20
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.	4.0	20

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37	Introducing a novel technique for measuring hydrogen crossover in membrane-based electrochemical cells. International Journal of Hydrogen Energy, 2021, 46, 15161-15167.	3.8	17
38	Direct thermal visualization of micro-scale hydrogen evolution reactions in proton exchange membrane electrolyzer cells. Energy Conversion and Management, 2019, 199, 111935.	4.4	15
39	Experimental studies on the effects of sheet resistance and wettability of catalyst layer on electro-catalytic activities for oxygen evolution reaction in proton exchange membrane electrolysis cells. International Journal of Hydrogen Energy, 2020, 45, 26595-26603.	3.8	14
40	Impact of electrode thick spot irregularities on polymer electrolyte membrane fuel cell initial performance. Journal of Power Sources, 2020, 466, 228344.	4.0	12
41	Investigation of titanium felt transport parameters for energy storage and hydrogen/oxygen production. , 2015, , .		8
42	Impacts of catalyst nanolayers on water permeation and swelling of polymer electrolyte membranes. Journal of Power Sources, 2020, 448, 227582.	4.0	8
43	Resolving Anodic Current and Temperature Distributions in a Polymer Electrolyte Membrane Water Electrolysis Cell Using a Pseudo-Two-Phase Computational Fluid Dynamics Model. Journal of the Electrochemical Society, 2021, 168, 054518.	1.3	7
44	Electrocatalysts: Building Electron/Proton Nanohighways for Full Utilization of Water Splitting Catalysts (Adv. Energy Mater. 16/2020). Advanced Energy Materials, 2020, 10, 2070075.	10.2	3
45	Investigation of Pore Shape Effects of Novel Thin LGDLs for High-Efficiency Hydrogen/Oxygen Generation and Energy Storage. , 2017, , .		2
46	Visualization on rapid and micro-scale dynamics of oxygen bubble evolution in PEMECs. , 2017, , .		2
47	Micro/nano manufacturing of novel multifunctional layers for hydrogen production from water splitting. , 2017, , .		2
48	Mathematical Modeling of Hydroxide-Exchange-Membrane Water Electrolyzer. ECS Meeting Abstracts, 2020, MA2020-02, 2443-2443.	0.0	2
49	Additive manufactured micro-sensor from silver nanoparticles for measuring shear stress and pressure. , 2017, , .		1
50	Investigation of Porous Transport Layer Parameters for Proton Exchange Membrane Water Electrolysis. ECS Meeting Abstracts, 2019, MA2019-02, 1747-1747.	0.0	1
51	Considering Two-Phase Flow in Three-Dimensional Computational Fluid Dynamics Simulations of Proton Exchange Membrane Water Electrolysis Devices. ECS Transactions, 2020, 98, 653-662.	0.3	1
52	Considering Two-Phase Flow in Three-Dimensional Computational Fluid Dynamics Simulations of Proton Exchange Membrane Water Electrolysis Devices. ECS Meeting Abstracts, 2020, MA2020-02, 2470-2470.	0.0	1
53	Effects of Porous Material Properties and Operating Conditions on PEM Electrolysis Performance and the Observation of Mass and Heat Transport. ECS Meeting Abstracts, 2019, , .	0.0	0
54	Comparison of Anode-Catalyst-Layer Coating Methods for Low-Temperature Electrolysis. ECS Meeting Abstracts, 2021, MA2021-02, 1256-1256.	0.0	0

#	Article	IF	Citations
55	(Invited) Towards Addressing Fundamental Scale-up Questions for Low-Temperature Electrolysis Electrodes. ECS Meeting Abstracts, 2021, MA2021-02, 1364-1364.	0.0	0
56	An Experimentally Validated Three-Dimensional Computational Fluid Dynamics Model for Polymer Electrolyte Membrane Water Electrolyzers. ECS Meeting Abstracts, 2021, MA2021-02, 1227-1227.	0.0	0
57	Direct Roll-to-Roll Coating of Catalyst-Coated Membranes for Low-Cost PEM Water Electrolyzers. ECS Meeting Abstracts, 2020, MA2020-02, 2465-2465.	0.0	0
58	In-Situ Analysis of Voltage Losses at the Porous Transport Layer in a PEM Water Electrolyzer Cell. ECS Meeting Abstracts, 2020, MA2020-02, 2460-2460.	0.0	0
59	Impact of Electrode Thick Spot Irregularities on Polymer Electrolyte Membrane Fuel Cell Performance. ECS Meeting Abstracts, 2020, MA2020-02, 2222-2222.	0.0	0
60	Optimizing the Porous Transport Layer and Catalyst Layer Interfacial Contact and Operating Protocol for PEM Water Electrolyzer Cells. ECS Meeting Abstracts, 2020, MA2020-02, 2462-2462.	0.0	0