Marcelo Carmo

List of Publications by Year
in descending order

73 papers	7,369 citations	126708 33 h-index	85405 71 g-index
75 all docs	75 docs citations	75 times ranked	7866 citing authors

#	Article	IF	Citations
1	A comprehensive review on PEM water electrolysis. International Journal of Hydrogen Energy, 2013, 38, 4901-4934.	3.8	3,509
2	Alternative supports for the preparation of catalysts for low-temperature fuel cells: the use of carbon nanotubes. Journal of Power Sources, 2005, 142, 169-176.	4.0	243
3	Pressurized PEM water electrolysis: Efficiency andÂgas crossover. International Journal of Hydrogen Energy, 2013, 38, 14921-14933.	3.8	233
4	Acidic or Alkaline? Towards a New Perspective on the Efficiency of Water Electrolysis. Journal of the Electrochemical Society, 2016, 163, F3197-F3208.	1.3	232
5	Perspectives on Low-Temperature Electrolysis and Potential for Renewable Hydrogen at Scale. Annual Review of Chemical and Biomolecular Engineering, 2019, 10, 219-239.	3.3	223
6	Bulk Metallic Glass Nanowire Architecture for Electrochemical Applications. ACS Nano, 2011, 5, 2979-2983.	7.3	201
7	An analysis of degradation phenomena in polymer electrolyte membrane water electrolysis. Journal of Power Sources, 2016, 326, 120-128.	4.0	200
8	Ion-solvating membranes as a new approach towards high rate alkaline electrolyzers. Energy and Environmental Science, 2019, 12, 3313-3318.	15.6	150
9	Polymer electrolyte membrane water electrolysis: Restraining degradation in the presence of fluctuating power. Journal of Power Sources, 2017, 342, 38-47.	4.0	147
10	Gas Permeation through Nafion. Part 1: Measurements. Journal of Physical Chemistry C, 2015, 119, 25145-25155.	1.5	144
11	Performance enhancement of PEM electrolyzers through iridium-coated titanium porous transport layers. Electrochemistry Communications, 2018, 97, 96-99.	2.3	123
12	Physical and electrochemical evaluation of commercial carbon black as electrocatalysts supports for DMFC applications. Journal of Power Sources, 2007, 173, 860-866.	4.0	109
13	Silver palladium coreâ€“shell electrocatalyst supported on MWNTs for ORR in alkaline media. Applied Catalysis B: Environmental, 2013, 138-139, 285-293.	10.8	90
14	Development and electrochemical studies of membrane electrode assemblies for polymer electrolyte alkaline fuel cells using FAA membrane and ionomer. Journal of Power Sources, 2013, 230, 169-175.	4.0	89
15	Bulk Metallic Glass Micro Fuel Cell. Small, 2013, 9, 2081-2085.	5.2	85
16	Scalable Fabrication of Multifunctional Freestanding Carbon Nanotube/Polymer Composite Thin Films for Energy Conversion. ACS Nano, 2012, 6, 1347-1356.	7.3	84
17	Initial approaches in benchmarking and round robin testing for proton exchange membrane water electrolyzers. International Journal of Hydrogen Energy, 2019, 44, 9174-9187.	3.8	80
18	Characterization of nitric acid functionalized carbon black and its evaluation as electrocatalyst support for direct methanol fuel cell applications. Applied Catalysis A: General, 2009, 355, 132-138.	2.2	78

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19	Pdâ€“Niâ€“Cuâ€“P metallic glass nanowires for methanol and ethanol oxidation in alkaline media. International Journal of Hydrogen Energy, 2013, 38, 11248-11255.	3.8	75
20	The stability challenge on the pathway to high-current-density polymer electrolyte membrane water electrolyzers. Electrochimica Acta, 2018, 278, 324-331.	2.6	74
21	Guided Evolution of Bulk Metallic Glass Nanostructures: A Platform for Designing 3D Electrocatalytic Surfaces. Advanced Materials, 2016, 28, 1940-1949.	11.1	71
22	Improving the Efficiency of PEM Electrolyzers through Membrane-Specific Pressure Optimization. Energies, 2020, 13, 612.	1.6	61
23	Temperature optimization for improving polymer electrolyte membrane-water electrolysis system efficiency. Applied Energy, 2021, 283, 116270.	5.1	55
24	Elucidating the Effect of Mass Transport Resistances on Hydrogen Crossover and Cell Performance in PEM Water Electrolyzers by Varying the Cathode Ionomer Content. Journal of the Electrochemical Society, 2019, 166, F465-F471.	1.3	54
25	PEM water electrolysis: Innovative approaches towards catalyst separation, recovery and recycling. International Journal of Hydrogen Energy, 2019, 44, 3450-3455.	3.8	54
26	Tunable Hierarchical Metallicâ€Glass Nanostructures. Advanced Functional Materials, 2013, 23, 2708-2713.	7.8	52
27	H2O2 treated carbon black as electrocatalyst support for polymer electrolyte membrane fuel cell applications. International Journal of Hydrogen Energy, 2008, 33, 6289-6297.	3.8	48
28	Exploring the Interface of Skinâ€Layered Titanium Fibers for Electrochemical Water Splitting. Advanced Energy Materials, 2021, 11, 2002926.	10.2	48
29	Palladium nanostructures from multi-component metallic glass. Electrochimica Acta, 2012, 74, 145-150.	2.6	47
30	A completely slot die coated membrane electrode assembly. International Journal of Hydrogen Energy, 2019, 44, 7053-7058.	3.8	43
31	On the mobility of carbon-supported platinum nanoparticles towards unveiling cathode degradation in water electrolysis. Journal of Power Sources, 2017, 365, 53-60.	4.0	41
32	Constructing a Multifunctional Interface between Membrane and Porous Transport Layer for Water Electrolyzers. ACS Applied Materials & Interfaces, 2021, 13, 16182-16196.	4.0	38
33	CuO Decoration Controls Nb₂O₅ Photocatalyst Selectivity in CO₂ Reduction. ACS Applied Energy Materials, 2020, 3, 7629-7636.	2.5	37
34	Enhanced activity observed for sulfuric acid and chlorosulfuric acid functionalized carbon black as PtRu and PtSn electrocatalyst support for DMFC and DEFC applications. International Journal of Hydrogen Energy, 2011, 36, 14659-14667.	3.8	34
35	Reviewâ€"Challenges and Opportunities for Increased Current Density in Alkaline Electrolysis by Increasing the Operating Temperature. Journal of the Electrochemical Society, 2021, 168, 114501.	1.3	34
36	Impact of porous transport layer compression on hydrogen permeation in PEM water electrolysis. International Journal of Hydrogen Energy, 2020, 45, 4008-4014.	3.8	32

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37	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
38	The Role of Electrocatalysts in the Development of Gigawatt-Scale PEM Electrolyzers. ACS Catalysis, 2022, 12, 6159-6171.	5.5	26
39	Water management in membrane electrolysis and options for advanced plants. International Journal of Hydrogen Energy, 2019, 44, 10147-10155.	3.8	25
40	Iridium nanoparticles for the oxygen evolution reaction: Correlation of structure and activity of benchmark catalyst systems. Electrochimica Acta, 2019, 302, 472-477.	2.6	25
41	A novel electrocatalyst support with proton conductive properties for polymer electrolyte membrane fuel cell applications. Journal of Power Sources, 2009, 191, 330-337.	4.0	24
42	Using neutron methods SANS and PGAA to study evolution of structure and composition of alkali-doped polybenzimidazole membranes. Journal of Membrane Science, 2019, 577, 12-19.	4.1	22
43	Energy Storage Using Hydrogen Produced From Excess Renewable Electricity. , 2019, , 165-199.		21
44	Development of Various Photovoltaicâ€Driven Water Electrolysis Technologies for Green Solar Hydrogen Generation. Solar Rrl, 2022, 6, 2100479.	3.1	21
45	Electrochemical NMR spectroscopy: Electrode construction and magnetic sample stirring. Microchemical Journal, 2019, 146, 658-663.	2.3	20
46	Why nonconventional materials are answers for sustainable agriculture. MRS Energy & Sustainability, 2019, 6, 1.	1.3	20
47	The Effect of Cell Compression and Cathode Pressure on Hydrogen Crossover in PEM Water Electrolysis. Journal of the Electrochemical Society, 2022, 169, 014502.	1.3	19
48	Homogeneity analysis of square meter-sized electrodes for PEM electrolysis and PEM fuel cells. Journal of Coatings Technology Research, 2018, 15, 1423-1432.	1.2	18
49	Multi-Scale Multi-Technique Characterization Approach for Analysis of PEM Electrolyzer Catalyst Layer Degradation. Journal of the Electrochemical Society, 2022, 169, 064502.	1.3	18
50	Sustainable Electrocoupling of the Biogenic Valeric Acid under in Situ Low-Field Nuclear Magnetic Resonance Conditions. ACS Sustainable Chemistry and Engineering, 2019, 7, 18288-18296.	3.2	14
51	Challenges and important considerations when benchmarking single-cell alkaline electrolyzers. International Journal of Hydrogen Energy, 2022, 47, 4294-4303.	3.8	14
52	The use of a dynamic hydrogen electrode as an electrochemical tool to evaluate plasma activated carbon as electrocatalyst support for direct methanol fuel cell. Materials Research Bulletin, 2009, 44, 51-56.	2.7	13
53	In-situ MRI velocimetry of the magnetohydrodynamic effect in electrochemical cells. Journal of Magnetic Resonance, 2020, 312, 106692.	1.2	12
54	Layer Formation from Polymer Carbon-Black Dispersions. Coatings, 2018, 8, 450.	1.2	11

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55	Steering and in situ monitoring of drying phenomena during film fabrication. Journal of Coatings Technology Research, 2019, 16, 1213-1221.	1.2	9
56	Characteristics of a New Polymer Electrolyte Electrolysis Technique with Only Cathodic Media Supply Coupled to a Photovoltaic Panel. Energies, 2019, 12, 4150.	1.6	9
57	Fuel Cell Electrode Characterization Using Neutron Scattering. Materials, 2020, 13, 1474.	1.3	8
58	Longâ€Term Operation of Nbâ€Coated Stainless Steel Bipolar Plates for Proton Exchange Membrane Water Electrolyzers. Advanced Energy and Sustainability Research, 2022, 3, .	2.8	8
59	Nickel Structures as a Template Strategy to Create Shaped Iridium Electrocatalysts for Electrochemical Water Splitting. ACS Applied Materials & Interfaces, 2021, 13, 13576-13585.	4.0	7
60	Composite Graphiteâ€"Epoxy Electrodes for In Situ Electrochemistry Coupling with High Resolution NMR. ACS Omega, 2022, 7, 4991-5000.	1.6	7
61	Cation-Exchange Method Enables Uniform Iridium Oxide Nanospheres for Oxygen Evolution Reaction. ACS Applied Nano Materials, 2022, 5, 4062-4071.	2.4	7
62	Enabling High Throughput Screening of Polymer Electrolyte Membrane (PEM) Water Electrolysis Components via Miniature Test Cells. Journal of the Electrochemical Society, 2016, 163, F3153-F3157.	1.3	6
63	Fabrication of High Performing and Durable Nickel-Based Catalyst Coated Diaphragms for Alkaline Water Electrolyzers. Journal of the Electrochemical Society, 2022, 169, 054502.	1.3	6
64	Electrochemical and impedance spectroscopy studies in H2/O2 and methanol/O2 proton exchange membrane fuel cells. Ionics, 2008, 14, 43-51.	1.2	5
65	Non-destructive in-operando investigation of catalyst layer degradation for water electrolyzers using synchrotron radiography. Materials Today Energy, 2020, 16, 100394.	2.5	5
66	Effect of the oxidation state and morphology of SnOx-based electrocatalysts on the CO2 reduction reaction. Journal of Materials Research, 2021, 36, 4240-4248.	1.2	5
67	Reusability of decal substrates for the fabrication of catalyst coated membranes. International Journal of Adhesion and Adhesives, 2020, 98, 102473.	1.4	4
68	A new setup for the quantitative analysis of drying by the use of gas-phase FTIR-spectroscopy. Review of Scientific Instruments, 2018, 89, 083102.	0.6	3
69	Communicationâ€"Layered Double Hydroxide as Intermediate-Temperature Electrolyte for Efficient Water Splitting. Journal of the Electrochemical Society, 2020, 167, 084512.	1.3	3
70	Metallicâ€Glass Nanostructures: Tunable Hierarchical Metallicâ€Glass Nanostructures (Adv. Funct.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	7.8	2
71	Fuel Cells: Bulk Metallic Glass Micro Fuel Cell (Small 12/2013). Small, 2013, 9, 2026-2026.	5.2	1
72	Alternative supports for catalysts preparation for low-temperature fuel cells using the alcohol reduction method. Studies in Surface Science and Catalysis, 2006, , 1009-1016.	1.5	0

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73	Electrocatalysts: Guided Evolution of Bulk Metallic Glass Nanostructures: A Platform for Designing 3D Electrocatalytic Surfaces (Adv. Mater. 10/2016). Advanced Materials, 2016, 28, 1902-1902.	11.1	0