Marcelo Carmo

List of Publications by Citations

74 papers	4,846 citations	27 h-index	69 g-index
75 ext. papers	5,981 ext. citations	8 avg, IF	5.91 L-index

#	Paper	IF	Citations
74	A comprehensive review on PEM water electrolysis. *International Journal of Hydrogen Energy*, **2013**, 38, 4901-4934	6.7	2398
73	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	8.9	229
72	Bulk metallic glass nanowire architecture for electrochemical applications. *ACS Nano*, **2011**, 5, 2979-83	16.7	176
71	Pressurized PEM water electrolysis: Efficiency and gas crossover. *International Journal of Hydrogen Energy*, **2013**, 38, 14921-14933	6.7	159
70	Acidic or Alkaline? Towards a New Perspective on the Efficiency of Water Electrolysis. *Journal of the Electrochemical Society*, **2016**, 163, F3197-F3208	3.9	145
69	Perspectives on Low-Temperature Electrolysis and Potential for Renewable Hydrogen at Scale. *Annual Review of Chemical and Biomolecular Engineering*, **2019**, 10, 219-239	8.9	118
68	An analysis of degradation phenomena in polymer electrolyte membrane water electrolysis. *Journal of Power Sources*, **2016**, 326, 120-128	8.9	111
67	Gas Permeation through Nafion. Part 1: Measurements. *Journal of Physical Chemistry C*, **2015**, 119, 25145-25155	5.2	105
66	Physical and electrochemical evaluation of commercial carbon black as electrocatalysts supports for DMFC applications. *Journal of Power Sources*, **2007**, 173, 860-866	8.9	89
65	Silver palladium core–shell electrocatalyst supported on MWNTs for ORR in alkaline media. *Applied Catalysis B: Environmental*, **2013**, 138-139, 285-293	21.8	82
64	Scalable fabrication of multifunctional freestanding carbon nanotube/polymer composite thin films for energy conversion. *ACS Nano*, **2012**, 6, 1347-56	16.7	78
63	Polymer electrolyte membrane water electrolysis: Restraining degradation in the presence of fluctuating power. *Journal of Power Sources*, **2017**, 342, 38-47	8.9	76
62	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	8.9	75
61	Bulk metallic glass micro fuel cell. *Small*, **2013**, 9, 2081-5, 2026	11	74
60	Ion-solvating membranes as a new approach towards high rate alkaline electrolyzers. *Energy and Environmental Science*, **2019**, 12, 3313-3318	35.4	71
59	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	5.1	60
58	PdNiCuP metallic glass nanowires for methanol and ethanol oxidation in alkaline media. *International Journal of Hydrogen Energy*, **2013**, 38, 11248-11255	6.7	57

57	Guided Evolution of Bulk Metallic Glass Nanostructures: A Platform for Designing 3D Electrocatalytic Surfaces. *Advanced Materials*, **2016**, 28, 1940-9	24	56
56	Performance enhancement of PEM electrolyzers through iridium-coated titanium porous transport layers. *Electrochemistry Communications*, **2018**, 97, 96-99	5.1	55
55	Initial approaches in benchmarking and round robin testing for proton exchange membrane water electrolyzers. *International Journal of Hydrogen Energy*, **2019**, 44, 9174-9187	6.7	48
54	Tunable Hierarchical Metallic-Glass Nanostructures. *Advanced Functional Materials*, **2013**, 23, 2708-2713	15.6	44
53	Palladium nanostructures from multi-component metallic glass. *Electrochimica Acta*, **2012**, 74, 145-150	6.7	41
52	The stability challenge on the pathway to high-current-density polymer electrolyte membrane water electrolyzers. *Electrochimica Acta*, **2018**, 278, 324-331	6.7	39
51	H2O2 treated carbon black as electrocatalyst support for polymer electrolyte membrane fuel cell applications. *International Journal of Hydrogen Energy*, **2008**, 33, 6289-6297	6.7	39
50	PEM water electrolysis: Innovative approaches towards catalyst separation, recovery and recycling. *International Journal of Hydrogen Energy*, **2019**, 44, 3450-3455	6.7	33
49	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	6.7	29
48	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	3.9	27
47	On the mobility of carbon-supported platinum nanoparticles towards unveiling cathode degradation in water electrolysis. *Journal of Power Sources*, **2017**, 365, 53-60	8.9	26
46	A novel electrocatalyst support with proton conductive properties for polymer electrolyte membrane fuel cell applications. *Journal of Power Sources*, **2009**, 191, 330-337	8.9	23
45	Improving the Efficiency of PEM Electrolyzers through Membrane-Specific Pressure Optimization. *Energies*, **2020**, 13, 612	3.1	22
44	A completely slot die coated membrane electrode assembly. *International Journal of Hydrogen Energy*, **2019**, 44, 7053-7058	6.7	18
43	Impact of porous transport layer compression on hydrogen permeation in PEM water electrolysis. *International Journal of Hydrogen Energy*, **2020**, 45, 4008-4014	6.7	18
42	Exploring the Interface of Skin-Layered Titanium Fibers for Electrochemical Water Splitting. *Advanced Energy Materials*, **2021**, 11, 2002926	21.8	17
41	Electrochemical NMR spectroscopy: Electrode construction and magnetic sample stirring. *Microchemical Journal*, **2019**, 146, 658-663	4.8	16
40	Temperature optimization for improving polymer electrolyte membrane-water electrolysis system efficiency. *Applied Energy*, **2021**, 283, 116270	10.7	15

39	CuO Decoration Controls Nb2O5 Photocatalyst Selectivity in CO2 Reduction. *ACS Applied Energy Materials*, **2020**, 3, 7629-7636	6.1	13
38	Iridium nanoparticles for the oxygen evolution reaction: Correlation of structure and activity of benchmark catalyst systems. *Electrochimica Acta*, **2019**, 302, 472-477	6.7	13
37	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	9.6	12
36	Water management in membrane electrolysis and options for advanced plants. *International Journal of Hydrogen Energy*, **2019**, 44, 10147-10155	6.7	12
35	Homogeneity analysis of square meter-sized electrodes for PEM electrolysis and PEM fuel cells **2018**, 15, 1423-1432		12
34	Why nonconventional materials are answers for sustainable agriculture. *MRS Energy & Sustainability* , **2019**, 6, 1	2.2	11
33	Energy Storage Using Hydrogen Produced From Excess Renewable Electricity **2019**, 165-199		10
32	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	8.9	10
31	In-situ MRI velocimetry of the magnetohydrodynamic effect in electrochemical cells. *Journal of Magnetic Resonance*, **2020**, 312, 106692	3	9
30	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	5.1	9
29	Constructing a Multifunctional Interface between Membrane and Porous Transport Layer for Water Electrolyzers. *ACS Applied Materials & Interfaces*, **2021**, 13, 16182-16196	9.5	9
28	Review Challenges and Opportunities for Increased Current Density in Alkaline Electrolysis by Increasing the Operating Temperature. *Journal of the Electrochemical Society*,	3.9	6
27	Electrochemical and impedance spectroscopy studies in H2/O2 and methanol/O2 proton exchange membrane fuel cells. *Ionics*, **2008**, 14, 43-51	2.7	5
26	Layer Formation from Polymer Carbon-Black Dispersions. *Coatings*, **2018**, 8, 450	2.9	5
25	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	8.3	4
24	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	3.9	4
23	Development of Various Photovoltaic-Driven Water Electrolysis Technologies for Green Solar Hydrogen Generation. *Solar Rrl*,2100479	7.1	4
22	The Role of Electrocatalysts in the Development of Gigawatt-Scale PEM Electrolyzers. *ACS Catalysis*,6159-6171	13.1	4

21	Steering and in situ monitoring of drying phenomena during film fabrication **2019**, 16, 1213-1221		3
20	A new setup for the quantitative analysis of drying by the use of gas-phase FTIR-spectroscopy. *Review of Scientific Instruments*, **2018**, 89, 083102	1.7	3
19	Fuel Cell Electrode Characterization Using Neutron Scattering. *Materials*, **2020**, 13,	3.5	2
18	Metallic-Glass Nanostructures: Tunable Hierarchical Metallic-Glass Nanostructures (Adv. Funct. Mater. 21/2013). *Advanced Functional Materials*, **2013**, 23, 2784-2784	15.6	2
17	Challenges and important considerations when benchmarking single-cell alkaline electrolyzers. *International Journal of Hydrogen Energy*, **2022**, 47, 4294-4303	6.7	2
16	Reusability of decal substrates for the fabrication of catalyst coated membranes. *International Journal of Adhesion and Adhesives*, **2020**, 98, 102473	3.4	2
15	Effect of the oxidation state and morphology of SnOx-based electrocatalysts on the CO2 reduction reaction. *Journal of Materials Research*,1	2.5	2
14	Stack Technology for PEM Electrolysis **2016**, 331-358		2
13	Characteristics of a New Polymer Electrolyte Electrolysis Technique with Only Cathodic Media Supply Coupled to a Photovoltaic Panel. *Energies*, **2019**, 12, 4150	3.1	2
12	Communication□ayered Double Hydroxide as Intermediate-Temperature Electrolyte for Efficient Water Splitting. *Journal of the Electrochemical Society*, **2020**, 167, 084512	3.9	1
11	The Effect of Cell Compression and Cathode Pressure on Hydrogen Crossover in PEM Water Electrolysis. *Journal of the Electrochemical Society*, **2022**, 169, 014502	3.9	1
10	Nickel Structures as a Template Strategy to Create Shaped Iridium Electrocatalysts for Electrochemical Water Splitting. *ACS Applied Materials & Interfaces*, **2021**, 13, 13576-13585	9.5	1
9	Non-destructive in-operando investigation of catalyst layer degradation for water electrolyzers using synchrotron radiography. *Materials Today Energy*, **2020**, 16, 100394	7	1
8	Fabrication of High Performing and Durable Nickel-Based Catalyst Coated Diaphragms for Alkaline Water Electrolyzers. *Journal of the Electrochemical Society*, **2022**, 169, 054502	3.9	1
7	Composite Graphite-Epoxy Electrodes for In Situ Electrochemistry Coupling with High Resolution NMR.. *ACS Omega*, **2022**, 7, 4991-5000	3.9	0
6	Cation-Exchange Method Enables Uniform Iridium Oxide Nanospheres for Oxygen Evolution Reaction. *ACS Applied Nano Materials*, **2022**, 5, 4062-4071	5.6	0
5	Long-Term Operation of Nb-Coated Stainless Steel Bipolar Plates for Proton Exchange Membrane Water Electrolyzers. *Advanced Energy and Sustainability Research*,2200024	1.6	0
4	Multi-Scale Multi-Technique Characterization Approach for Analysis of PEM Electrolyzer Catalyst Layer Degradation. *Journal of the Electrochemical Society*, **2022**, 169, 064502	3.9	0

3	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	24
2	Fuel Cells: Bulk Metallic Glass Micro Fuel Cell (Small 12/2013). *Small*, **2013**, 9, 2026-2026	11
1	Alternative supports for catalysts preparation for low-temperature fuel cells using the alcohol reduction method. *Studies in Surface Science and Catalysis*, **2006**, 1009-1016	1.8