Carmen M. Rangel

List of Publications by Year
in descending order

118	3,144	147566	182168
papers	citations	31 h-index	51 g-index

125	125	125	3406
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Kinetics of hydrolysis of sodium borohydride for hydrogen production in fuel cell applications: A review. International Journal of Hydrogen Energy, 2011, 36, 9772-9790.	3.8	221
2	Electrochemical behaviour of steel rebars in concrete: influence of environmental factors and cement chemistry. Electrochimica Acta, 2001, 46, 3905-3912.	2.6	197
3	Comprehensive review and future perspectives on the photocatalytic hydrogen production. Journal of Chemical Technology and Biotechnology, 2019, 94, 3049-3063.	1.6	136
4	Compound parabolic concentrator technology development to commercial solar detoxification applications. Solar Energy, 1999, 67, 317-330.	2.9	122
5	High performance PEMFC stack with open-cathode at ambient pressure and temperature conditions. International Journal of Hydrogen Energy, 2007, 32, 4350-4357.	3.8	115
6	Review on micro-direct methanol fuel cells. Renewable and Sustainable Energy Reviews, 2014, 34, 58-70.	8.2	90
7	A comparative study of approaches to direct methanol fuel cells modelling. International Journal of Hydrogen Energy, 2007, 32, 415-424.	3.8	72
8	Effect of anode and cathode flow field design on the performance of a direct methanol fuel cell. Chemical Engineering Journal, 2010, 157, 174-180.	6.6	67
9	Hydrogen production from sodium borohydride in methanolâ€“water mixtures. International Journal of Hydrogen Energy, 2010, 35, 9862-9868.	3.8	66
10	Modified nickel oxides as cathode materials for MCFC. Journal of Power Sources, 2000, 86, 329-333.	4.0	63
11	Characterization of MEA degradation for an open air cathode PEM fuel cell. International Journal of Hydrogen Energy, 2012, 37, 7299-7308.	3.8	60
12	Modification of N-doped TiO₂ photocatalysts using noble metals (Pt, Pd) â€“ a combined XPS and DFT study. Physical Chemistry Chemical Physics, 2017, 19, 7062-7071.	1.3	60
13	Water transport through a PEM fuel cell: A one-dimensional model with heat transfer effects. Chemical Engineering Science, 2009, 64, 2216-2225.	1.9	57
14	Carbon supports for methanol oxidation catalyst. Journal of Power Sources, 2005, 151, 79-84.	4.0	52
15	Syngas production by electrochemical CO 2 reduction in an ionic liquid based-electrolyte. Journal of CO2 Utilization, 2017, 18, 62-72.	3.3	52
16	Semiconductor electrochemistry approach to passivity and stress corrosion cracking susceptibility of stainless steels. Electrochimica Acta, 2005, 50, 5076-5082.	2.6	50
17	Carbon xerogel supported Pt and Ptâ€“Ni catalysts for electro-oxidation of methanol in basic medium. Catalysis Today, 2005, 102-103, 173-176.	2.2	49
18	Water availability and water usage solutions for electrolysis in hydrogen production. Journal of Cleaner Production, 2021, 315, 128124.	4.6	49

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19	One-dimensional and non-isothermal model for a passive DMFC. Journal of Power Sources, 2011, 196, 8973-8982.	4.0	46
20	Modelling and experimental studies on a direct methanol fuel cell working under low methanol crossover and high methanol concentrations. International Journal of Hydrogen Energy, 2009, 34, 6443-6451.	3.8	45
21	Ptâ€“Ru catalysts supported on carbon xerogels for PEM fuel cells. International Journal of Hydrogen Energy, 2012, 37, 7200-7211.	3.8	44
22	Electrochemical aspects of black chromium electrodeposition from 1-butyl-3-methylimidazolium tetrafluoroborate ionic liquid. Electrochimica Acta, 2011, 56, 10347-10352.	2.6	42
23	Nafion phosphonic acid composite membranes for proton exchange membranes fuel cells. Applied Surface Science, 2019, 487, 889-897.	3.1	41
24	Conversion coating growth on 2024-T3 Al alloy. The effect of pre-treatments. Surface and Coatings Technology, 2008, 202, 3396-3402.	2.2	39
25	Hydrogen generation and storage by aqueous sodium borohydride (NaBH 4) hydrolysis for small portable fuel cells (H 2 â€“ PEMFC). International Journal of Hydrogen Energy, 2016, 41, 15426-15432.	3.8	39
26	Water management in direct methanol fuel cells. International Journal of Hydrogen Energy, 2009, 34, 8245-8256.	3.8	38
27	Influence of Pre-treatments on the Surface Condition of 2024-T3 Aluminium Alloy. Transactions of the Institute of Metal Finishing, 2000, 78, 179-185.	0.6	37
28	Alkali free hydrolysis of sodium borohydride for hydrogen generation under pressure. International Journal of Hydrogen Energy, 2010, 35, 9869-9878.	3.8	37
29	The influence of aniline and its derivatives on the corrosion behaviour of copper in acid solution: a theoretical approach. Computational and Theoretical Chemistry, 2005, 757, 1-7.	1.5	36
30	Development and performance analysis of a metallic passive micro-direct methanol fuel cell for portable applications. International Journal of Hydrogen Energy, 2015, 40, 5408-5415.	3.8	33
31	Voltammetric studies of the transpassive dissolution of mild steel in carbonate/bicarbonate solutions. Electrochimica Acta, 1989, 34, 255-263.	2.6	32
32	The passivation of aluminium in lithium carbonate/bicarbonate solutions. Corrosion Science, 1992, 33, 327-343.	3.0	31
33	Electrodeposition of black chromium spectrally selective coatings from a Cr(III)â€“ionic liquid solution. Thin Solid Films, 2011, 519, 1845-1850.	0.8	31
34	Durability and reutilization capabilities of a Niâ€“Ru catalyst for the hydrolysis of sodium borohydride in batch reactors. Catalysis Today, 2011, 170, 40-49.	2.2	30
35	High surface area LaNiO3 electrodes for oxygen electrocatalysis in alkaline media. Journal of Applied Electrochemistry, 2012, 42, 325-332.	1.5	30
36	The effect of ion implantation on the fatigue life and corrosion resistance of M50 steel bearings. Surface and Coatings Technology, 1995, 74-75, 754-759.	2.2	29

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37	Pseudo-equilibrium phase diagrams for PEOÃ¢Â€Â“Zn salts-based electrolytes. Solid State Ionics, 1999, 116, 293-300.	1.3	29
38	The hydrogen roadmap in the Portuguese energy system â€“ Developing the P2G case. International Journal of Hydrogen Energy, 2020, 45, 25646-25657.	3.8	29
39	New modified Nafion-bisphosphonic acid composite membranes for enhanced proton conductivity and PEMFC performance. International Journal of Hydrogen Energy, 2021, 46, 17562-17571.	3.8	29
40	Some aspects of the electrochemical behaviour of mild steel in carbonate/bicarbonate solutions. Electrochimica Acta, 1986, 31, 1659-1662.	2.6	28
41	Stability and durability under potential cycling of Pt/C catalyst with new surface-functionalized carbon support. International Journal of Hydrogen Energy, 2016, 41, 12962-12975.	3.8	28
42	Challenges arising from the use of TiO2/rGO/Pt photocatalysts to produce hydrogen from crude glycerol compared to synthetic glycerol. International Journal of Hydrogen Energy, 2019, 44, 28494-28506.	3.8	27
43	Three Dimensional Model of a High Temperature PEMFC. Study of the Flow Field Effect on Performance. Fuel Cells, 2012, 12, 566-576.	1.5	26
44	Water management in a passive direct methanol fuel cell. International Journal of Energy Research, 2013, 37, 991-1001.	2.2	26
45	Experimental and modeling studies of a micro direct methanol fuel cell. Renewable Energy, 2015, 74, 464-470.	4.3	26
46	The influence of aniline and its derivatives on the corrosion behaviour of copper in acid solution. Journal of Solid State Electrochemistry, 2005, 9, 504-511.	1.2	25
47	Li-based conversion coatings on aluminium: An electrochemical study of coating formation and growth. Surface and Coatings Technology, 2006, 200, 5823-5828.	2.2	23
48	Electrodeposition of gold thin films from 1-butyl-1-methylpyrrolidinium dicyanamide Au3+ solutions. Thin Solid Films, 2011, 519, 6278-6283.	0.8	23
49	A sodium borohydride hydrogen generation reactor for stationary applications: Experimental and reactor simulation studies. Chemical Engineering Science, 2012, 84, 70-79.	1.9	23
50	Assessing cell polarity reversal degradation phenomena in PEM fuel cells by electrochemical impedance spectroscopy. International Journal of Hydrogen Energy, 2013, 38, 7684-7696.	3.8	23
51	Oxide loading effect on the electrochemical performance of LaNiO3 coatings in alkaline media. Electrochimica Acta, 2013, 89, 106-113.	2.6	21
52	Dielectric Properties of Al-Nb Amorphous Mixed Oxides. ECS Journal of Solid State Science and Technology, 2013, 2, N205-N210.	0.9	21
53	Water handling challenge on hydrolysis of sodium borohydride in batch reactors. International Journal of Hydrogen Energy, 2012, 37, 6985-6994.	3.8	18
54	Simulation of a stand-alone residential PEMFC power system with sodium borohydride as hydrogen source. International Journal of Electrical Power and Energy Systems, 2013, 49, 57-65.	3.3	18

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55	Enhancing photocatalytic properties of rutile TiO2 by codoping with N and metals â€“ Ab initio study. International Journal of Hydrogen Energy, 2015, 40, 9696-9703.	3.8	17
56	Stress corrosion cracking of Î±-brass in waters with and without additions. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1985, 16, 1671-1681.	1.4	16
57	Microstructural modifications of aluminium surfaces ion implanted with W and its effect on corrosion and passivation. Surface and Coatings Technology, 1997, 89, 101-107.	2.2	16
58	Integrating hydrogen generation and storage in a novel compact electrochemical system based on metal hydrides. Journal of Power Sources, 2008, 181, 382-385.	4.0	16
59	Effects of the addition of an organic polymer on the hydrolysis of sodium tetrahydroborate in batch reactors. International Journal of Hydrogen Energy, 2010, 35, 11456-11469.	3.8	16
60	Rehydrogenation of Sodium Borates to Close the NaBH4-H2 Cycle: A Review. Energies, 2021, 14, 3567.	1.6	16
61	Semiconductive Properties of Anodic Niobium Oxides. Portugaliae Electrochimica Acta, 2006, 24, 305-311.	0.4	16
62	Novel hydrogen generator/storage based on metal hydrides. International Journal of Hydrogen Energy, 2009, 34, 4587-4591.	3.8	15
63	Electrochemical production of syngas from CO₂at pressures up to 30 bar in electrolytes containing ionic liquid. Reaction Chemistry and Engineering, 2019, 4, 1982-1990.	1.9	15
64	Water Transport through a Proton-Exchange Membrane (PEM) Fuel Cell Operating near Ambient Conditions: Experimental and Modeling Studies. Energy & Fuels, 2009, 23, 397-402.	2.5	14
65	Improvement of corrosion resistance of M50 bearing steel by implantation with metal ions. Nuclear Instruments & Methods in Physics Research B, 1991, 59-60, 772-777.	0.6	13
66	A dynamic two phase flow model for a pilot scale sodium borohydride hydrogen generation reactor. International Journal of Hydrogen Energy, 2014, 39, 5291-5300.	3.8	13
67	Performance of an Active Micro Direct Methanol Fuel Cell Using Reduced Catalyst Loading MEAs. Energies, 2017, 10, 1683.	1.6	13
68	Zinc dissolution in lisbon tap water. Corrosion Science, 1992, 33, 1479-1493.	3.0	12
69	Batch sodium borohydride hydrolysis systems: Effect ofÂsudden valve opening on hydrogen generation rate. International Journal of Hydrogen Energy, 2012, 37, 1947-1953.	3.8	12
70	Kinetic modeling of self-hydrolysis of aqueous NaBH4 solutions by model-based isoconversional method. International Journal of Hydrogen Energy, 2014, 39, 6567-6576.	3.8	12
71	Enhanced proton conductivity of Nafion-azolebisphosphonate membranes for PEM fuel cells. New Journal of Chemistry, 2019, 43, 15249-15257.	1.4	12
72	Electrochemical impedance studies on pure aluminium in carbonate solution. Journal of Applied Electrochemistry, 1990, 20, 874-876.	1.5	11

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73	Anodic oxidation and dielectric behaviour of aluminiumâ€“niobium alloys. Corrosion Science, 2006, 48, 2203-2211.	3.0	11
74	Some studies in the poly(ethylene oxide)â€“Zinc chloride system. Journal of Applied Electrochemistry, 1997, 27, 1290-1296.	1.5	10
75	Chromium ion implantation for inhibition of corrosion of aluminium. Surface and Coatings Technology, 1996, 83, 194-200.	2.2	9
76	New azaheterocyclic aromatic diphosphonates for hybrid materials for fuel cell applications. New Journal of Chemistry, 2013, 37, 3084.	1.4	9
77	Stability of LaNiO3 gas diffusion oxygen electrodes. Journal of Solid State Electrochemistry, 2014, 18, 821-831.	1.2	9
78	New proton conductive membranes of indazole- and condensed pyrazolebisphosphonic acid-Nafion membranes for PEMFC. Renewable Energy, 2022, 196, 1187-1196.	4.3	9
79	Cation mobility in poly(ethylene oxide) solid electrolytes. Journal of Electroanalytical Chemistry, 1998, 442, 91-97.	1.9	8
80	Pore scale modelling of a cathode catalyst layer in fuel cell environment: agglomerate reconstruction and variables optimization. Journal of Solid State Electrochemistry, 2016, 20, 541-554.	1.2	8
81	TiO2-reduced graphene oxide-Pt nanocomposites for the photogeneration of hydrogen from ethanol liquid and gas phases. Catalysis Today, 2021, 380, 41-52.	2.2	8
82	Chloride induced pitting initiation on 304L stainless steel in acidic sodium sulphate solutions. Corrosion Engineering Science and Technology, 1988, 23, 186-189.	0.3	7
83	Zinc and polyphosphates as corrosion inhibitors for zinc in near neutral waters. Corrosion Engineering Science and Technology, 1992, 27, 207-212.	0.3	7
84	Performance of a Direct Methanol Fuel Cell Operating Close to Room Temperature. Journal of Fuel Cell Science and Technology, 2011, 8, .	0.8	7
85	Electrochemical characterisation of a Zn/(PEO)4ZnCl2/Nb2O5 solid-state cell. Journal of Solid State Electrochemistry, 2012, 16, 665-671.	1.2	7
86	Gold deposition from 1-butyl-1-methyl-pyrrolidinium dicyanamide ionic liquid at open-circuit and under potentiostatic control. Surface and Coatings Technology, 2013, 232, 645-651.	2.2	7
87	ac conductivity of polymer complexes formed by poly (ethylene oxide) and nickel chloride. Solid State Ionics, 1992, 58, 3-7.	1.3	6
88	Improvement of rolling contact fatigue life of ion implanted M50 steel. Nuclear Instruments & Methods in Physics Research B, 1993, 80-81, 246-249.	0.6	6
89	Synthesis of New Azole Phosphonate Precursors for Fuel Cells Proton Exchange Membranes. Heteroatom Chemistry, 2015, 26, 236-248.	0.4	6
90	Origin of photocatalytic activity enhancement in Pd/Pt-deposited anatase N-TiO₂ â€“ experimental insights and DFT study of the (001) surface. Physical Chemistry Chemical Physics, 2020, 22, 18536-18547.	1.3	6

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91	Synthesis and electrocatalytic properties of La_{0.8}Sr_{0.2}FeO_{3â^'Î´} perovskite oxide for oxygen reactions. AIMS Materials Science, 2017, 4, 991-1009.	0.7	6
92	Improving Electrocatalytic Activity of LaNiO3 Films by Deposition on Foam Nickel Substrates. Portugaliae Electrochimica Acta, 2011, 29, 335-342.	0.4	6
93	Lanthanide-Based Conversion Coatings for Aluminium. Key Engineering Materials, 2002, 230-232, 68-71.	0.4	5
94	Modeling of catalytic hydrogen generation from sodium borohydride. Computer Aided Chemical Engineering, 2008, , 757-762.	0.3	5
95	Electrochemical impedance spectroscopy of plastically deformed mild steel. Corrosion Engineering Science and Technology, 1992, 27, 237-240.	0.3	4
96	RenH<inf>2</inf> - Stand-Alone Energy System Supported by Totally Renewable Hydrogen Production. , 2007, , .		4
97	Effects of NaBH₄ Additions on Hydrogen Absorption by Nanostructured FeTi Powders. Materials Science Forum, 0, 587-588, 921-925.	0.3	4
98	The effect of the angle of incidence on the aqueous corrosion of ion implanted M50 steel substrates. Surface and Coatings Technology, 1992, 51, 483-488.	2.2	3
99	Influence of surface treatments in the initial stages of anodizing Alâ€“Ag alloys in neutral electrolytes. Journal of Solid State Electrochemistry, 2006, 10, 83-90.	1.2	3
100	Fuel Cells and On-Demand Hydrogen Production: Didactic Demonstration Prototype. , 2007, , .		3
101	Hydrogen PEMFC stack performance analysis: AÂdata-driven approach. International Journal of Hydrogen Energy, 2010, 35, 9973-9982.	3.8	3
102	Modelling and identification of the dominant phenomena in hydrogen fuel-cells by the application of DRT Analysis. Computer Aided Chemical Engineering, 2013, , 283-288.	0.3	3
103	The behaviour of ion-implanted tungsten species during anodic oxidation of aluminium. Journal Physics D: Applied Physics, 1998, 31, 2083-2090.	1.3	2
104	Growth of Anodic Oxides on Sputtered Al-Nb Alloys. Key Engineering Materials, 2002, 230-232, 44-47.	0.4	2
105	Novel data-driven methodologies for parameter estimation and interpretation of fuel cells performance. , 2011, , .		2
106	Fractional-order transfer functions applied to the modeling of hydrogen PEM fuel cells. Computer Aided Chemical Engineering, 2011, , 1748-1752.	0.3	2
107	Structural Features of Electrodeposited Copper Electrodes for CO₂ Conversion. Materials Science Forum, 2012, 730-732, 239-244.	0.3	2
108	Electrochemical behavior of europium perovskites (Ca0.6Eu0.4MnO3) in alkaline aqueous media. Journal of Solid State Electrochemistry, 2016, 20, 1713-1722.	1.2	2

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109	Corrosion behaviour of mild steel beneath porous plasma sprayed coatings. Corrosion Engineering Science and Technology, 1996, 31, 227-232.	0.3	2
110	Properties of the passive films on cold worked stainless steels in conditions of susceptibility to stress corrosion cracking. European Journal of Control, 2004, 29, 61-72.	1.6	2
111	Selective Catalytic Reduction of NO_x over Zeolite-Coated Cordierite-Based Ceramic Foams: Water Deactivation. Materials Science Forum, 0, 587-588, 810-814.	0.3	1
112	Key issues to high electroactivity for methanol oxidation and oxygen reduction of Pt-based supported catalyst in fuel cells relevant environment. CiÃªncia & Tecnologia Dos Materiais, 2016, 28, 88-98.	0.5	1
113	Influence de la Deformation Plastique sur les Proprietes des Films de Passivation Formes sur les Aciers Inoxydables. Relations avec la Corrosion sous Contrainte. Portugaliae Electrochimica Acta, 2002, 20, 119-132.	0.4	1
114	Modified Titania in the Photo-Assisted Oxidation of Chloroform. Materials Science Forum, 2006, 514-516, 1385-1390.	0.3	0
115	Solâ€“gel coatings for pitting corrosion resistance of AA 2024-T3 aluminium alloy. , 2007, , 52-62.		0
116	Effect of Milling Energy Modulation on the High Temperature Synthesis of FeTi. Materials Science Forum, 0, 636-637, 934-940.	0.3	0
117	State of the art Energy Materials. Applied Surface Science, 2019, 474, 1.	3.1	0
118	Imidazolium and picolinium-based electrolytes for electrochemical reduction of CO₂ at high pressure. Energy Advances, 0, , .	1.4	0