Jong Hyun Jang

List of Publications by Year
in descending order

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103 papers	3,891 citations	94433 37 h-index	138484 58 g-index
104 all docs	104 docs citations	104 times ranked	4373 citing authors

#	Article	IF	Citations
1	Role of Electronic Perturbation in Stability and Activity of Pt-Based Alloy Nanocatalysts for Oxygen Reduction. Journal of the American Chemical Society, 2012, 134, 19508-19511.	13.7	219
2	The effects of NafionÂ® ionomer content in PEMFC MEAs prepared by a catalyst-coated membrane (CCM) spraying method. International Journal of Hydrogen Energy, 2010, 35, 2119-2126.	7.1	177
3	Electrodeposited Ni dendrites with high activity and durability for hydrogen evolution reaction in alkaline water electrolysis. Journal of Materials Chemistry, 2012, 22, 15153.	6.7	159
4	Effect of morphology of electrodeposited Ni catalysts on the behavior of bubbles generated during the oxygen evolution reaction in alkaline water electrolysis. Chemical Communications, 2013, 49, 9323.	4.1	146
5	Development of electrodeposited IrO2 electrodes as anodes in polymer electrolyte membrane water electrolysis. Applied Catalysis B: Environmental, 2015, 179, 285-291.	20.2	118
6	Hydrous RuO[sub 2]/Carbon Black Nanocomposites with 3D Porous Structure by Novel Incipient Wetness Method for Supercapacitors. Journal of the Electrochemical Society, 2006, 153, A334.	2.9	103
7	Polybenzimidazolium hydroxides â€“ Structure, stability and degradation. Polymer Degradation and Stability, 2012, 97, 264-272.	5.8	98
8	Alkaline anion exchange membrane water electrolysis: Effects of electrolyte feed method and electrode binder content. Journal of Power Sources, 2018, 382, 22-29.	7.8	96
9	Effect of ionomer content and relative humidity on polymer electrolyte membrane fuel cell (PEMFC) performance of membrane-electrode assemblies (MEAs) prepared by decal transfer method. International Journal of Hydrogen Energy, 2010, 35, 9678-9686.	7.1	93
10	The effects of relative humidity on the performances of PEMFC MEAs with various NafionÂ® ionomer contents. International Journal of Hydrogen Energy, 2010, 35, 13104-13110.	7.1	87
11	A study on electrode fabrication and operation variables affecting the performance of anion exchange membrane water electrolysis. Journal of Industrial and Engineering Chemistry, 2019, 76, 410-418.	5.8	85
12	Analysis on the effect of operating conditions on electrochemical conversion of carbon dioxide to formic acid. International Journal of Hydrogen Energy, 2014, 39, 16506-16512.	7.1	78
13	Development of a membrane electrode assembly for alkaline water electrolysis by direct electrodeposition of nickel on carbon papers. Applied Catalysis B: Environmental, 2014, 154-155, 197-205.	20.2	77
14	Electrodeposited IrO2/Ti electrodes as durable and cost-effective anodes in high-temperature polymer-membrane-electrolyte water electrolyzers. Applied Catalysis B: Environmental, 2018, 226, 289-294.	20.2	76
15	Polarization characteristics of a low catalyst loading PEM water electrolyzer operating at elevated temperature. Journal of Power Sources, 2016, 309, 127-134.	7.8	68
16	CISâ€“ZnS quantum dots for self-aligned liquid crystal molecules with superior electro-optic properties. Nanoscale, 2013, 5, 193-199.	5.6	64
17	Blend membranes of polybenzimidazole and an anion exchange ionomer (FAA3) for alkaline water electrolysis: Improved alkaline stability and conductivity. Journal of Membrane Science, 2018, 564, 653-662.	8.2	60
18	Supported Core@Shell Electrocatalysts for Fuel Cells: Close Encounter with Reality. Scientific Reports, 2013, 3, 1309.	3.3	59

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19	Sulfonated poly(ether sulfone)/sulfonated polybenzimidazole blend membrane for fuel cell applications. European Polymer Journal, 2010, 46, 1633-1641.	5.4	58
20	Surface-Rearranged Pd₃Au/C Nanocatalysts by Using CO-Induced Segregation for Formic Acid Oxidation Reactions. ACS Catalysis, 2014, 4, 2402-2408.	11.2	55
21	Effects of Cathode Inlet Relative Humidity on PEMFC Durability during Startupâ€“Shutdown Cycling. Journal of the Electrochemical Society, 2010, 157, B633.	2.9	54
22	Factors in electrode fabrication for performance enhancement of anion exchange membrane water electrolysis. Journal of Power Sources, 2017, 347, 283-290.	7.8	54
23	Non-precious metal electrocatalysts for hydrogen production in proton exchange membrane water electrolyzer. Applied Catalysis B: Environmental, 2017, 206, 608-616.	20.2	54
24	Effects of Cathode Inlet Relative Humidity on PEMFC Durability during Startupâ€“Shutdown Cycling. Journal of the Electrochemical Society, 2010, 157, B104.	2.9	48
25	Anion exchange membrane water electrolyzer with an ultra-low loading of Pt-decorated Ni electrocatalyst. Applied Catalysis B: Environmental, 2016, 180, 674-679.	20.2	47
26	An extremely low Pt loading cathode for a highly efficient proton exchange membrane water electrolyzer. Nanoscale, 2017, 9, 19045-19049.	5.6	44
27	Development of a Durable PEMFC Startup Process by Applying a Dummy Load. Journal of the Electrochemical Society, 2009, 156, B955.	2.9	43
28	Enhancement of oxygen reduction reaction on PtAu nanoparticles via CO induced surface Pt enrichment. Applied Catalysis B: Environmental, 2013, 129, 375-381.	20.2	43
29	Low-loading IrO2 supported on Pt for catalysis of PEM water electrolysis and regenerative fuel cells. Applied Catalysis B: Environmental, 2020, 272, 118955.	20.2	43
30	Degradation of polymer electrolyte membrane fuel cells repetitively exposed to reverse current condition under different temperature. Journal of Power Sources, 2011, 196, 9906-9915.	7.8	42
31	Morphology-controlled synthesis of ternary Ptâ€“Pdâ€“Cu alloy nanoparticles for efficient electrocatalytic oxygen reduction reactions. Applied Catalysis B: Environmental, 2015, 174-175, 526-532.	20.2	42
32	Sulfonated poly(ether sulfone)-based silica nanocomposite membranes for high temperature polymer electrolyte fuel cell applications. International Journal of Hydrogen Energy, 2011, 36, 7152-7161.	7.1	41
33	Development of a Durable PEMFC Start-Up Process by Applying a Dummy Load. Journal of the Electrochemical Society, 2010, 157, B118.	2.9	40
34	Development of a galvanostatic analysis technique as an in-situ diagnostic tool for PEMFC single cells and stacks. International Journal of Hydrogen Energy, 2012, 37, 5891-5900.	7.1	40
35	Performance degradation and microstructure changes in freezeâ€“thaw cycling for PEMFC MEAs with various initial microstructures. International Journal of Hydrogen Energy, 2010, 35, 12888-12896.	7.1	39
36	Tunable Synthesis of N,C-Codoped Ti³⁺-Enriched Titanium Oxide Support for Highly Durable PEMFC Cathode. ACS Catalysis, 2020, 10, 12080-12090.	11.2	39

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37	Water removal characteristics of proton exchange membrane fuel cells using a dry gas purging method. Journal of Power Sources, 2008, 180, 784-790.	7.8	38
38	Complex Capacitance Analysis of Ionic Resistance and Interfacial Capacitance in PEMFC and DMFC Catalyst Layers. Journal of the Electrochemical Society, 2009, 156, B1293.	2.9	38
39	Synthesis and characterization of acid-doped polybenzimidazole membranes by solâ€“gel and post-membrane casting method. Journal of Membrane Science, 2010, 357, 130-133.	8.2	37
40	Reversible Surface Segregation of Pt in a Pt₃Au/C Catalyst and Its Effect on the Oxygen Reduction Reaction. Journal of Physical Chemistry C, 2013, 117, 9164-9170.	3.1	37
41	Electrodeposited molybdenum sulfide as a cathode for proton exchange membrane water electrolyzer. Journal of Power Sources, 2018, 392, 69-78.	7.8	37
42	Development of a novel decal transfer process for fabrication of high-performance and reliable membrane electrode assemblies for PEMFCs. International Journal of Hydrogen Energy, 2011, 36, 12465-12473.	7.1	36
43	Effects of Pt loading in the anode on the durability of a membraneâ€“electrode assembly for polymer electrolyte membrane fuel cells during startup/shutdown cycling. International Journal of Hydrogen Energy, 2012, 37, 18455-18462.	7.1	35
44	Enhanced CO2 reduction activity of polyethylene glycol-modified Au nanoparticles prepared via liquid medium sputtering. Applied Catalysis B: Environmental, 2018, 237, 673-680.	20.2	35
45	Application of TGA techniques to analyze the compositional and structural degradation of PEMFC MEAs. Polymer Degradation and Stability, 2012, 97, 1010-1016.	5.8	34
46	Third-body effects of native surfactants on Pt nanoparticle electrocatalysts in proton exchange fuel cells. Chemical Communications, 2015, 51, 2968-2971.	4.1	34
47	Development of porous Pt/IrO2/carbon paper electrocatalysts with enhanced mass transport as oxygen electrodes in unitized regenerative fuel cells. Electrochemistry Communications, 2016, 64, 14-17.	4.7	34
48	Impedance Analysis for Hydrogen Adsorption Pseudocapacitance and Electrochemically Active Surface Area of Pt Electrode. Langmuir, 2009, 25, 11947-11954.	3.5	31
49	Phosphate adsorption and its effect on oxygen reduction reaction for PtxCoy alloy and Aucoreâ€“Ptshell electrocatalysts. Electrochimica Acta, 2011, 56, 8802-8810.	5.2	30
50	Effect of Catalyst Layer Ionomer Content on Performance of Intermediate Temperature Proton Exchange Membrane Fuel Cells (IT-PEMFCs) under Reduced Humidity Conditions. Electrochimica Acta, 2017, 224, 228-234.	5.2	30
51	Degradation behavior of a polymer electrolyte membrane fuel cell employing metallic bipolar plates under reverse current condition. Electrochimica Acta, 2012, 78, 324-330.	5.2	28
52	Effects of residual oxygen partial pressure on the degradation of polymer electrolyte membrane fuel cells under reverse current conditions. Journal of Power Sources, 2012, 198, 42-50.	7.8	27
53	Effects of platinum loading on the performance of proton exchange membrane fuel cells with high ionomer content in catalyst layers. International Journal of Hydrogen Energy, 2013, 38, 9826-9834.	7.1	27
54	Oxygen reduction reaction on electrodeposited PtAu alloy catalysts in the presence of phosphoric acid. Applied Catalysis B: Environmental, 2015, 165, 495-502.	20.2	26

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55	Synthesis and characterization of poly(benzimidazolium) membranes for anion exchange membrane fuel cells. Polymer Bulletin, 2013, 70, 2619-2631.	3.3	25
56	Effect of gold subsurface layer on the surface activity and segregation in Pt/Au/Pt3M (where M =) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 7 034707.	3.0	25
57	Porous Nafion membranes. Journal of Membrane Science, 2016, 520, 723-730.	8.2	24
58	Effects of stabilizers on the synthesis of Pt3Cox/C electrocatalysts for oxygen reduction. International Journal of Hydrogen Energy, 2011, 36, 12088-12095.	7.1	23
59	Electrochemical impedance analysis with transmission line model for accelerated carbon corrosion in polymer electrolyte membrane fuel cells. International Journal of Hydrogen Energy, 2018, 43, 15457-15465.	7.1	23
60	PBI nanofiber mat-reinforced anion exchange membranes with covalently linked interfaces for use in water electrolysers. Journal of Membrane Science, 2021, 640, 119832.	8.2	23
61	Proton-exchange membrane CO2 electrolyzer for CO production using Ag catalyst directly electrodeposited onto gas diffusion layer. Journal of Power Sources, 2019, 437, 226898.	7.8	22
62	Graphene-oxide-intercalated layered manganese oxides as an efficient oxygen reduction reaction catalyst in alkaline media. Electrochemistry Communications, 2014, 41, 35-38.	4.7	21
63	Enhanced electrochemical conversion of CO2 to CO at bimetallic Ag-Zn catalysts formed on polypyrrole-coated electrode. Journal of Catalysis, 2021, 393, 92-99.	6.2	20
64	Tuning the oxygen reduction activity of the Ptâ€“Ni nanoparticles upon specific anion adsorption by varying heat treatment atmospheres. Physical Chemistry Chemical Physics, 2014, 16, 13726.	2.8	19
65	A Review of Industrially Developed Components and Operation Conditions for Anion Exchange Membrane Water Electrolysis. Journal of Electrochemical Science and Technology, 2017, 8, 265-273.	2.2	19
66	Computational and experimental design of active and durable Ir-based nanoalloy for electrochemical oxygen reduction reaction. Applied Catalysis B: Environmental, 2018, 235, 177-185.	20.2	18
67	Hydrocarbon-based electrode ionomer for proton exchange membrane fuel cells. International Journal of Hydrogen Energy, 2020, 45, 32856-32864.	7.1	18
68	Transition metal alloying effect on the phosphoric acid adsorption strength of Pt nanoparticles: an experimental and density functional theory study. Scientific Reports, 2017, 7, 7186.	3.3	17
69	Amphiphilic Ti porous transport layer for highly effective PEM unitized regenerative fuel cells. Science Advances, 2021, 7, .	10.3	16
70	Effect of low voltage limit on degradation mechanism during highâ€frequency dynamic load in proton exchange membrane water electrolysis. International Journal of Energy Research, 2022, 46, 11867-11878.	4.5	16
71	Fuel cell performance of polymer electrolyte membrane based on hexafluorinated sulfonated poly(ether sulfone). Polymer Bulletin, 2009, 62, 457-468.	3.3	15
72	Intermediate Temperature Fuel Cell and Oxygen Reduction Studies With Carbon-Supported Platinum Alloy Catalysts in Phosphoric Acid Based Systems. Journal of Fuel Cell Science and Technology, 2012, 9, .	0.8	14

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73	Effect of the spirobiindane group in sulfonated poly(arylene ether sulfone) copolymer as electrode binder for polymer electrolyte membrane fuel cells. Journal of Industrial and Engineering Chemistry, 2017, 47, 315-322.	5.8	14
74	Self-healing Pd3Au@Pt/C core-shell electrocatalysts with substantially enhanced activity and durability towards oxygen reduction. Applied Catalysis B: Environmental, 2017, 206, 666-674.	20.2	14
75	Polystyrene-Based Hydroxide-Ion-Conducting Ionomer: Binder Characteristics and Performance in Anion-Exchange Membrane Fuel Cells. Polymers, 2021, 13, 690.	4.5	14
76	Polymer electrolyte membrane unitized regenerative fuel cells: Operational considerations for achieving high round trip efficiency at low catalyst loading. Applied Catalysis B: Environmental, 2021, 297, 120458.	20.2	14
77	Ag-deposited Ti gas diffusion electrode in proton exchange membrane CO2 electrolyzer for CO production. Journal of Industrial and Engineering Chemistry, 2020, 82, 374-382.	5.8	13
78	Sulfonated poly(ether sulfone)â€based catalyst binder for a protonâ€exchange membrane fuel cell. Journal of Applied Polymer Science, 2009, 113, 2499-2506.	2.6	12
79	Development of a 600 W Proton Exchange Membrane Fuel Cell Power System for the Hazardous Mission Robot. Journal of Fuel Cell Science and Technology, 2010, 7, .	0.8	12
80	Characterizing Coverage of Phosphoric Acid on Carbon-Supported Platinum Nanoparticles Using In Situ Extended X-Ray Absorption Fine Structure Spectroscopy and Cyclic Voltammetry. Journal of the Electrochemical Society, 2016, 163, F210-F215.	2.9	12
81	Polyethylenimineâ€assisted Synthesis of Au Nanoparticles for Efficient Syngas Production. Electroanalysis, 2019, 31, 1401-1408.	2.9	12
82	Effect of membrane electrode assembly fabrication method on the single cell performances of polybenzimidazole-based high temperature polymer electrolyte membrane fuel cells. Macromolecular Research, 2014, 22, 1214-1220.	2.4	11
83	Experimental Investigation of Operating Parameters in Power Generation by Labâ€Scale Reverse Electroâ€Dialysis (<scp>RED</scp>). Bulletin of the Korean Chemical Society, 2016, 37, 1010-1019.	1.9	11
84	Urchin-Shaped Hollow Iron-Nitrogen-Doped Carbon Microspheres as High-Performance Electrocatalysts for Oxygen Reduction. Journal of the Electrochemical Society, 2017, 164, F224-F228.	2.9	11
85	ortho-Dichlorobenzene as a pore modifier for PEMFC catalyst electrodes and dense Nafion membranes with one porous surface. Journal of Materials Chemistry, 2012, 22, 14602.	6.7	9
86	Surface Structures and Electrochemical Activities of PtRu Overlayers on Ir Nanoparticles. ACS Catalysis, 2012, 2, 739-745.	11.2	9
87	Electrochemical porosimetry: Deconvolution of distribution functions. Electrochemistry Communications, 2006, 8, 1191-1196.	4.7	8
88	Effect of Se modification on RuSey/C electrocatalyst for oxygen reduction with phosphoric acid. Electrochemistry Communications, 2013, 27, 46-49.	4.7	8
89	Alkyl chain modified sulfonated poly(ether sulfone) for fuel cell applications. International Journal of Hydrogen Energy, 2013, 38, 2889-2899.	7.1	8
90	In situ electrochemical and mechanical accelerated stress tests of a gas diffusion layer for proton exchange membrane fuel cells. Korean Journal of Chemical Engineering, 2019, 36, 299-304.	2.7	8

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91	Dual exchange membrane fuel cell with sequentially aligned cation and anion exchange membranes for non-humidified operation. Journal of Membrane Science, 2020, 596, 117745.	8.2	8
92	Effect of oleylamine concentration on the structure and oxygen reduction activity of carbon-supported surface-Pt-enriched Pt 3 Au electrocatalysts. Journal of Power Sources, 2015, 290, 130-135.	7.8	6
93	Effects of Diffusion Layer (DL) and ORR Catalyst (MORR) on the Performance of MORR/IrO2/DL Electrodes for PEM-Type Unitized Regenerative Fuel Cells. Journal of Electrochemical Science and Technology, 2017, 8, 7-14.	2.2	6
94	Effect of the amount of reducing agent on surface structures, electrochemical activity and stability of PtRu catalysts. Electrochimica Acta, 2011, 56, 8688-8694.	5.2	5
95	Crosslinked monosulfonated poly(arylene ether) using cyclodimerization of trifluorovinyl ether groups for fuel cell applications. Polymer International, 2011, 60, 685-691.	3.1	5
96	Combined Effect of Catholyte Gap and Cell Voltage on Syngas Ratio in Continuous CO₂/H₂O Co-electrolysis. Journal of Electrochemical Science and Technology, 0, , .	2.2	4
97	Effect of Nafion ionomer and catalyst in cathode layers for the direct formic acid fuel cell with complex capacitance analysis on the ionic resistance. Electrochimica Acta, 2011, , .	5.2	3
98	Micro fluidic structure selection of metal mesh combinations in proton exchange membrane fuel cells for air supply enhancement. International Journal of Hydrogen Energy, 2020, 45, 32808-32815.	7.1	3
99	Hydrogen Oxidation Reaction Activity of Sub-Monolayer Pt-Shell/Pd-Core Nanoparticles. Journal of the Electrochemical Society, 2013, 160, H62-H66.	2.9	2
100	Analysis of the spatially distributed performance degradation of a polymer electrolyte membrane fuel cell stack. International Journal of Hydrogen Energy, 2014, 39, 16548-16555.	7.1	2
101	Development of La0.8Sr0.2MnO3+Î´ electrocatalysts by Pechini's methods as cathode electrocatalysts in alkaline anion exchange membrane fuel cells. Solid State Ionics, 2016, 290, 124-129.	2.7	2
102	Effect of the fabrication condition of membrane electrode assemblies with carbon-supported ordered PtCo electrocatalyst on the durability of polymer electrolyte membrane fuel cells. International Journal of Hydrogen Energy, 2020, 45, 32834-32843.	7.1	2
103	Effects of Diffusion Layer (DL) and ORR Catalyst (MORR) on the Performance of MORR/IrO2/DL Electrodes for PEM-Type Unitized Regenerative Fuel Cells. Journal of Electrochemical Science and Technology, 2017, 8, 7-14.	2.2	2