Arunachala Kannan

List of Publications by Year
in descending order

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94 papers	6,374 citations	71102 41 h-index	66911 78 g-index
97 all docs	97 docs citations	97 times ranked	7038 citing authors

#	Article	IF	Citations
1	Recent developments in phase change materials for energy storage applications: A review. International Journal of Heat and Mass Transfer, 2019, 129, 491-523.	4.8	939
2	Gas diffusion layer for proton exchange membrane fuel cellsâ€"A review. Journal of Power Sources, 2009, 194, 146-160.	7.8	427
3	Ptâ€"M (M=Fe, Co, Ni and Cu) electrocatalysts synthesized by an aqueous route for proton exchange membrane fuel cells. Electrochemistry Communications, 2002, 4, 898-903.	4.7	260
4	Can Li-Ion batteries be the panacea for automotive applications?. Renewable and Sustainable Energy Reviews, 2017, 68, 685-692.	16.4	203
5	Non-platinum cathode catalysts for alkaline membrane fuel cells. International Journal of Hydrogen Energy, 2012, 37, 4406-4412.	7.1	186
6	Is the H2 economy realizable in the foreseeable future? Part I: H2 production methods. International Journal of Hydrogen Energy, 2020, 45, 13777-13788.	7.1	186
7	Comparison of the chemical stability of the high energy density cathodes of lithium-ion batteries. Electrochemistry Communications, 2001, 3, 624-627.	4.7	162
8	Prospects and problems of concentrating solar power technologies for power generation in the desert regions. Renewable and Sustainable Energy Reviews, 2016, 53, 1106-1131.	16.4	156
9	High Capacity Surface-Modified LiCoO[sub 2] Cathodes for Lithium-Ion Batteries. Electrochemical and Solid-State Letters, 2003, 6, A16.	2.2	146
10	Surface/Chemically Modified LiMn[sub 2]O[sub 4] Cathodes for Lithium-Ion Batteries. Electrochemical and Solid-State Letters, 2002, 5, A167.	2.2	141
11	Is the H2 economy realizable in the foreseeable future? Part III: H2 usage technologies, applications, and challenges and opportunities. International Journal of Hydrogen Energy, 2020, 45, 28217-28239.	7.1	139
12	Hybrid Microgrid Model Based on Solar Photovoltaic Battery Fuel Cell System for Intermittent Load Applications. IEEE Transactions on Energy Conversion, 2015, 30, 359-366.	5.2	133
13	Corrosion resistance of Hastelloys in molten metal-chloride heat-transfer fluids for concentrating solar power applications. Solar Energy, 2014, 103, 62-69.	6.1	131
14	Is the H2 economy realizable in the foreseeable future? Part II: H2 storage, transportation, and distribution. International Journal of Hydrogen Energy, 2020, 45, 20693-20708.	7.1	129
15	Oxygen reduction reaction on nanostructured Pt-based electrocatalysts: A review. International Journal of Hydrogen Energy, 2020, 45, 31775-31797.	7.1	127
16	Nature inspired flow field designs for proton exchange membrane fuel cell. International Journal of Hydrogen Energy, 2013, 38, 3717-3726.	7.1	120
17	Characterization techniques for gas diffusion layers for proton exchange membrane fuel cells â€" A review. Journal of Power Sources, 2012, 213, 317-337.	7.8	118
18	Carbon supported nano-sized Ptâ€"Pd and Ptâ€"Co electrocatalysts for proton exchange membrane fuel cells. International Journal of Hydrogen Energy, 2009, 34, 9450-9460.	7.1	112

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19	Biomimetic flow fields for proton exchange membrane fuel cells: A review of design trends. Energy, 2020, 190, 116435.	8.8	92
20	An overview of proton exchange membranes for fuel cells: Materials and manufacturing. International Journal of Hydrogen Energy, 2022, 47, 19086-19131.	7.1	92
21	Cross-linked poly(vinyl alcohol) and poly(styrene sulfonic acid-co-maleic anhydride)-based semi-interpenetrating network as proton-conducting membranes for direct methanol fuel cells. Journal of Power Sources, 2007, 171, 340-347.	7.8	83
22	Proton-conducting membranes with high selectivity from cross-linked poly(vinyl alcohol) and poly(vinyl pyrrolidone) for direct methanol fuel cell applications. Journal of Power Sources, 2009, 186, 22-28.	7.8	83
23	Fatty acids based eutectic phase change system for thermal energy storage applications. Applied Thermal Engineering, 2018, 142, 466-475.	6.0	83
24	Semi-interpenetrating network based on cross-linked poly(vinyl alcohol) and poly(styrene sulfonic) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 164, 449-456.	7.8	75
25	Cobaltâ€“Nitrogen Coâ€doped Carbon Nanotube Cathode Catalyst for Alkaline Membrane Fuel Cells. ChemElectroChem, 2016, 3, 1455-1465.	3.4	66
26	Synthesis and electrochemical evaluation of high capacity nanostructured VO2 cathodes. Solid State Ionics, 2003, 159, 265-271.	2.7	65
27	Effect of Thermally Induced Oxygen Vacancy of Î±-MnO₂ Nanorods toward Oxygen Reduction Reaction. Inorganic Chemistry, 2019, 58, 5335-5344.	4.0	65
28	Highly Porous MIL-100(Fe) for the Hydrogen Evolution Reaction (HER) in Acidic and Basic Media. ACS Omega, 2020, 5, 18941-18949.	3.5	62
29	Functionally graded nano-porous gas diffusion layer for proton exchange membrane fuel cells under low relative humidity conditions. Electrochimica Acta, 2008, 53, 2416-2422.	5.2	61
30	Preparation and evaluation of electrodeposited platinum nanoparticles on in situ carbon nanotubes grown carbon paper for proton exchange membrane fuel cells. International Journal of Hydrogen Energy, 2009, 34, 3838-3844.	7.1	60
31	Synthesis and characterization of carbon nanotubes supported platinum nanocatalyst for proton exchange membrane fuel cells. Journal of Power Sources, 2010, 195, 466-470.	7.8	60
32	Development of carbon nanotubes based gas diffusion layers by in situ chemical vapor deposition process for proton exchange membrane fuel cells. Journal of Power Sources, 2009, 192, 297-303.	7.8	58
33	Binary Ptâ€“Pd and ternary Ptâ€“Pdâ€“Ru nanoelectrocatalysts for direct methanol fuel cells. International Journal of Hydrogen Energy, 2013, 38, 2900-2907.	7.1	58
34	Highly active nitrogen-doped nanocarbon electrocatalysts for alkaline direct methanol fuel cell. Journal of Power Sources, 2015, 281, 94-102.	7.8	58
35	Nano-electrocatalyst materials for low temperature fuel cells: A review. Chinese Journal of Catalysis, 2015, 36, 458-472.	14.0	58
36	Enhanced Photoelectrochemical Water Splitting with Er- and W-Codoped Bismuth Vanadate with WO₃ Heterojunction-Based Two-Dimensional Photoelectrode. ACS Applied Materials & Interfaces, 2019, 11, 19029-19039.	8.0	56

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37	Characterization of the Bismuth-Modified Manganese Dioxide Cathodes in Rechargeable Alkaline Cells. Journal of the Electrochemical Society, 2002, 149, A483.	2.9	49
38	Carbon nano-chain and carbon nano-fibers based gas diffusion layers for proton exchange membrane fuel cells. Journal of Power Sources, 2007, 167, 330-335.	7.8	49
39	Bio-Batteries and Bio-Fuel Cells: Leveraging on Electronic Charge Transfer Proteins. Journal of Nanoscience and Nanotechnology, 2009, 9, 1665-1678.	0.9	46
40	Convergence criteria establishment for 3D simulation of proton exchange membrane fuel cell. International Journal of Hydrogen Energy, 2012, 37, 2482-2489.	7.1	46
41	Synthesis and characterization of platinum nanoparticles on in situ grown carbon nanotubes based carbon paper for proton exchange membrane fuel cell cathode. Journal of Power Sources, 2009, 188, 51-56.	7.8	45
42	Poly-acrylonitrile-based gel-polymer electrolytes for sodium-ion batteries. Ionics, 2017, 23, 2817-2822.	2.4	44
43	Low temperature synthesis and electrochemical behavior of LiV3O8 cathode. Journal of Power Sources, 2006, 159, 1405-1408.	7.8	42
44	Nanostructured Gas Diffusion and Catalyst Layers for Proton Exchange Membrane Fuel Cells. Electrochemical and Solid-State Letters, 2007, 10, B47.	2.2	40
45	Effect of counter cations on electrocatalytic activity of oxide pyrochlores towards oxygen reduction/evolution in alkaline medium: an electrochemical and spectroscopic study. Journal of Power Sources, 1991, 35, 163-173.	7.8	39
46	Effect of carbon paper substrate of the gas diffusion layer on the performance of proton exchange membrane fuel cell. Electrochimica Acta, 2010, 55, 2746-2751.	5.2	39
47	Gas diffusion layer using a new type of graphitized nano-carbon PUREBLACKÂ® for proton exchange membrane fuel cells. Electrochemistry Communications, 2006, 8, 887-891.	4.7	38
48	Membrane electrode assembly with doped polyaniline interlayer for proton exchange membrane fuel cells under low relative humidity conditions. Journal of Power Sources, 2009, 193, 447-453.	7.8	38
49	Pt Co@NCNTs cathode catalyst using ZIF-67 for proton exchange membrane fuel cell. International Journal of Hydrogen Energy, 2018, 43, 3520-3526.	7.1	38
50	High performance catalysts based on Fe/N co-doped carbide-derived carbon and carbon nanotube composites for oxygen reduction reaction in acid media. International Journal of Hydrogen Energy, 2019, 44, 12636-12648.	7.1	38
51	Gas diffusion layer development using design of experiments for the optimization of a proton exchange membrane fuel cell performance. Energy, 2018, 151, 689-695.	8.8	37
52	Transition metal phthalocyanine-modified shungite-based cathode catalysts for alkaline membrane fuel cell. International Journal of Hydrogen Energy, 2021, 46, 4365-4377.	7.1	36
53	Surface modification of gas diffusion layers by inorganic nanomaterials for performance enhancement of proton exchange membrane fuel cells at low RH conditions. International Journal of Hydrogen Energy, 2009, 34, 6377-6383.	7.1	35
54	Structural Stability of Li[sub 1â^'x]Ni[sub 0.85]Co[sub 0.15]O[sub 2] and Li[sub 1â^'x]Ni[sub 0.85]Co[sub 0.12]Al[sub 0.03]O[sub 2] Cathodes at Elevated Temperatures. Journal of the Electrochemical Society, 2003, 150, A349.	2.9	34

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55	Off-grid solar thermal water heating system using phase-change materials: design, integration and real environment investigation. Applied Energy, 2019, 240, 73-83.	10.1	34
56	Oxide-based bifunctional oxygen electrode for rechargeable metal/air batteries. Journal of Power Sources, 1989, 25, 141-150.	7.8	28
57	Photoelectrochemical Solar Water Splitting: The Role of the Carbon Nanomaterials in Bismuth Vanadate Composite Photoanodes toward Efficient Charge Separation and Transport. Langmuir, 2019, 35, 14492-14504.	3.5	28
58	Role of Alkali Metal in BiVO₄ Crystal Structure for Enhancing Charge Separation and Diffusion Length for Photoelectrochemical Water Splitting. ACS Applied Materials & Interfaces, 2020, 12, 52808-52818.	8.0	28
59	Photoelectrochemical water splitting using lithium doped bismuth vanadate photoanode with near-complete bulk charge separation. Journal of Power Sources, 2020, 448, 227418.	7.8	26
60	Scalable Alignment and Selective Deposition of Nanoparticles for Multifunctional Sensor Applications. Nano Letters, 2020, 20, 3199-3206.	9.1	25
61	Highly Conductive Garnet-Type Electrolytes: Access to Li_{6.5}La₃Zr_{1.5}Ta_{0.5}O₁₂ Prepared by Molten Salt and Solid-State Methods. ACS Applied Materials & Interfaces, 2020, 12, 48580-48590.	8.0	24
62	MOF-Derived CuPt/NC Electrocatalyst for Oxygen Reduction Reaction. Catalysts, 2020, 10, 799.	3.5	24
63	Wire rod coating process of gas diffusion layers fabrication for proton exchange membrane fuel cells. Journal of Power Sources, 2008, 178, 231-237.	7.8	23
64	Development of gas diffusion electrodes for low relative humidity proton exchange membrane fuel cells. International Journal of Hydrogen Energy, 2011, 36, 2213-2220.	7.1	23
65	Enhancing interfacial charge transfer in a WO₃/BiVO₄ photoanode heterojunction through gallium and tungsten co-doping and a sulfur modified Bi₂O₃ interfacial layer. Journal of Materials Chemistry A, 2021, 9, 16137-16149.	10.3	22
66	PMMA-TiO2 Fibers for the Photocatalytic Degradation of Water Pollutants. Nanomaterials, 2020, 10, 1279.	4.1	20
67	Rechargeable iron/air cells employing bifunctional oxygen electrodes of oxide pyrochlores. Journal of Power Sources, 1991, 35, 113-121.	7.8	18
68	Synthesis of Pt nanocatalyst with micelle-encapsulated multi-walled carbon nanotubes as support for proton exchange membrane fuel cells. Electrochimica Acta, 2010, 55, 6496-6500.	5.2	18
69	Cross-linked glucose oxidase clusters for biofuel cell anode catalysts. Biofabrication, 2013, 5, 035009.	7.1	17
70	Maximization of quadruple phase boundary for alkaline membrane fuel cell using non-stoichiometric Î±-MnO2 as cathode catalyst. International Journal of Hydrogen Energy, 2019, 44, 1166-1173.	7.1	17
71	Stability of the dry proton conductor CsHSO4 in hydrogen atmosphere. Materials Research Bulletin, 2003, 38, 691-698.	5.2	16
72	Comparison of Pt/MWCNTs nanocatalysts synthesis processes for proton exchange membrane fuel cells. International Journal of Hydrogen Energy, 2011, 36, 10877-10883.	7.1	16

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73	Plugâ€in Hybrid Vehicle and Secondâ€Life Applications of Lithiumâ€ion Batteries at Elevated Temperature. Batteries and Supercaps, 2018, 1, 75-82.	4.7	15
74	Stoichiometric and non-stoichiometric tungsten doping effect in bismuth vanadate based photoactive material for photoelectrochemical water splitting. Electrochimica Acta, 2019, 299, 262-272.	5.2	15
75	Effects of yttrium, ytterbium with tungsten co-doping on the light absorption and charge transport properties of bismuth vanadate photoanodes to achieve superior photoelectrochemical water splitting. Sustainable Energy and Fuels, 2020, 4, 1496-1506.	4.9	15
76	Development of Durable Platinum Nanocatalyst on Carbon Nanotubes for Proton Exchange Membrane Fuel Cells. Journal of the Electrochemical Society, 2010, 157, B846.	2.9	13
77	Fractional-factorial design of a porous-carbon fuel-cell electrode. Journal of Applied Electrochemistry, 1988, 18, 149-153.	2.9	11
78	Effect of diffusion layers fabricated with different fiber diameters on the performance of low temperature proton exchange membrane fuel cells. Journal of Power Sources, 2013, 221, 134-140.	7.8	11
79	Protein hot spots at bio-nano interfaces. Materials Today, 2011, 14, 360-365.	14.2	10
80	Facile synthesis of Al-stabilized lithium garnets by a solution-combustion technique for all solid-state batteries. Materials Advances, 2021, 2, 5181-5188.	5.4	10
81	NH2-MIL-125(Ti) doped CdS/Graphene composite as electro and photo catalyst in basic medium under light irradiation. Environmental Research, 2021, 200, 111719.	7.5	10
82	Synthesis and Electrochemical Properties of High Capacity V[sub 2]O[sub 5-Î] Cathodes. Journal of the Electrochemical Society, 2003, 150, A990.	2.9	9
83	Gas Diffusion Layers for Proton Exchange Membrane Fuel Cells Using In situ Modified Carbon Papers with Multiâ€walled Carbon Nanotubes Nanoforest. Fuel Cells, 2010, 10, 369-374.	2.4	9
84	Pulse-reverse electrodeposition of Ptâ€“Co bimetallic catalysts for oxygen reduction reaction in acidic medium. International Journal of Hydrogen Energy, 2020, 45, 7025-7035.	7.1	9
85	Study of Carbon Nanotube-Supported Platinum Nanocatalyst Fabricated with Sodium Formate Reducing Agent in Ethylene Glycol Suspension. ISRN Nanotechnology, 2011, 2011, 1-6.	1.3	9
86	Development and Evaluation of Gas Diffusion Layer Using Paraffin Wax Carbon for Proton Exchange Membrane Fuel Cells. Fuel Cells, 2010, 10, 563-566.	2.4	8
87	Development of gas diffusion layer using water based carbon slurry for proton exchange membrane fuel cells. Electrochimica Acta, 2011, 56, 1591-1596.	5.2	7
88	Design and performance of an off-grid solar combisystem using phase change materials. International Journal of Heat and Mass Transfer, 2021, 164, 120574.	4.8	4
89	Bilayered nano-hetero-structured n/n junction thin-film electrodes, WO3/Yb-Mo-BiVO4, for efficient photoelectrochemical water splitting. Journal of Applied Electrochemistry, 2022, 52, 535-558.	2.9	4
90	CO adsorption in PdxCoyXz (X = Au, Mo, Ni) tertiary alloy nanocatalysts for PEM fuel cells-a theoretical analysis. International Journal of Energy Research, 2011, 35, 594-600.	4.5	3

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91	Development and Characterization of Gas Diffusion Layer Fabricated Using Carbon Slurry with Ammonium Lauryl Sulfate for Proton Exchange Member Fuel Cells. Journal of the Chinese Chemical Society, 2012, 59, 1357-1364.	1.4	3
92	Influence of Cell Fabrication Procedure on the Performance of the Dye Sensitized Solar Cell. Journal of Nanoscience and Nanotechnology, 2012, 12, 1829-1834.	0.9	1
93	<I>A Special Section on</I>: Bio-Solar and Bio-Fuel Cells. Journal of Nanoscience and Nanotechnology, 2009, 9, 1663-1664.	0.9	0
94	Editorial: Research and Reports in Chemistry. Research and Reports in Chemistry, 0, Volume 1, 7-8.	0.0	0