David P Wilkinson

List of Publications by Year
in descending order

121 papers	11,943 citations	53660 45 h-index	25716 108 g-index
122 all docs	122 docs citations	122 times ranked	13603 citing authors

#	Article	IF	Citations
1	A review of anode catalysis in the direct methanol fuel cell. Journal of Power Sources, 2006, 155, 95-110.	4.0	1,651
2	Noncarbon Support Materials for Polymer Electrolyte Membrane Fuel Cell Electrocatalysts. Chemical Reviews, 2011, 111, 7625-7651.	23.0	741
3	Aging mechanisms and lifetime of PEFC and DMFC. Journal of Power Sources, 2004, 127, 127-134.	4.0	707
4	The Stability Challenges of Oxygen Evolving Catalysts: Towards a Common Fundamental Understanding and Mitigation of Catalyst Degradation. Angewandte Chemie - International Edition, 2017, 56, 5994-6021.	7.2	573
5	Nano-architecture and material designs for water splitting photoelectrodes. Chemical Society Reviews, 2012, 41, 5654.	18.7	483
6	Progress in preparation of non-noble electrocatalysts for PEM fuel cell reactions. Journal of Power Sources, 2006, 156, 171-182.	4.0	480
7	Degradation of polymer electrolyte membranes. International Journal of Hydrogen Energy, 2006, 31, 1838-1854.	3.8	448
8	A review of cathode materials and structures for rechargeable lithiumâ€“air batteries. Energy and Environmental Science, 2015, 8, 2144-2198.	15.6	415
9	Progress in the synthesis of carbon nanotube- and nanofiber-supported Pt electrocatalysts for PEM fuel cell catalysis. Journal of Applied Electrochemistry, 2006, 36, 507-522.	1.5	383
10	Unlocking the door to highly active ORR catalysts for PEMFC applications: polyhedron-engineered Pt-based nanocrystals. Energy and Environmental Science, 2018, 11, 258-275.	15.6	367
11	MoS₂ Nanosheets: A Designed Structure with High Active Site Density for the Hydrogen Evolution Reaction. ACS Catalysis, 2013, 3, 2101-2107.	5.5	340
12	WS2 nanosheets as a highly efficient electrocatalyst for hydrogen evolution reaction. Applied Catalysis B: Environmental, 2012, 125, 59-66.	10.8	295
13	A critical review of two-phase flow in gas flow channels of proton exchange membrane fuel cells. Journal of Power Sources, 2010, 195, 4531-4553.	4.0	241
14	In-situ methods for the determination of current distributions in PEM fuel cells. Electrochimica Acta, 1998, 43, 3773-3783.	2.6	235
15	Non-noble Metal Electrocatalysts for the Hydrogen Evolution Reaction in Water Electrolysis. Electrochemical Energy Reviews, 2021, 4, 473-507.	13.1	224
16	Architecture for portable direct liquid fuel cells. Journal of Power Sources, 2006, 154, 202-213.	4.0	198
17	Hierarchical CuOâ€“TiO₂ Hollow Microspheres for Highly Efficient Photodriven Reduction of CO₂ to CH₄. ACS Sustainable Chemistry and Engineering, 2015, 3, 2381-2388.	3.2	179
18	Recent Progresses in Oxygen Reduction Reaction Electrocatalysts for Electrochemical Energy Applications. Electrochemical Energy Reviews, 2019, 2, 518-538.	13.1	176

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19	A Review of Carbon-Composited Materials as Air-Electrode Bifunctional Electrocatalysts for Metalâ€“Air Batteries. Electrochemical Energy Reviews, 2018, 1, 1-34.	13.1	163
20	Electrocatalytic activity and stability of substituted iron phthalocyanines towards oxygen reduction evaluated at different temperatures. Electrochimica Acta, 2008, 53, 6906-6919.	2.6	153
21	Large-Scale Synthesis of TiO₂ Microspheres with Hierarchical Nanostructure for Highly Efficient Photodriven Reduction of CO₂ to CH₄. ACS Applied Materials & Interfaces, 2014, 6, 15488-15498.	4.0	146
22	Compositing doped-carbon with metals, non-metals, metal oxides, metal nitrides and other materials to form bifunctional electrocatalysts to enhance metal-air battery oxygen reduction and evolution reactions. Chemical Engineering Journal, 2018, 348, 416-437.	6.6	141
23	Facile synthesis of open mesoporous carbon nanofibers with tailored nanostructure as a highly efficient counter electrode in CdSe quantum-dot-sensitized solar cells. Journal of Materials Chemistry, 2011, 21, 8742.	6.7	132
24	Fabrication of hollow core carbon spheres with hierarchical nanoarchitecture for ultrahigh electrical charge storage. Journal of Materials Chemistry, 2012, 22, 19031.	6.7	112
25	PEM fuel cell electrocatalysts based on transition metal macrocyclic compounds. Coordination Chemistry Reviews, 2016, 315, 153-177.	9.5	110
26	N-doped hollow urchin-like anatase TiO 2 @C composite as a novel anode for Li-ion batteries. Journal of Power Sources, 2018, 385, 10-17.	4.0	110
27	A review of phosphorus and phosphides as anode materials for advanced sodium-ion batteries. Journal of Materials Chemistry A, 2020, 8, 4996-5048.	5.2	108
28	Model of oxygen bubbles and performance impact in the porous transport layer of PEM water electrolysis cells. International Journal of Hydrogen Energy, 2017, 42, 28665-28680.	3.8	97
29	Applications of Metallocenes in Rechargeable Lithium Batteries for Overcharge Protection. Journal of the Electrochemical Society, 1992, 139, 5-10.	1.3	96
30	Progress in nanostructured (Fe or Co)/N/C non-noble metal electrocatalysts for fuel cell oxygen reduction reaction. Electrochimica Acta, 2018, 262, 326-336.	2.6	95
31	High Pt loading on functionalized multiwall carbon nanotubes as a highly efficient cathode electrocatalyst for proton exchange membrane fuel cells. Journal of Materials Chemistry, 2011, 21, 8066.	6.7	85
32	Development of an experimentally validated semi-empirical fully-coupled performance model of a PEM electrolysis cell with a 3-D structured porous transport layer. International Journal of Hydrogen Energy, 2017, 42, 25831-25847.	3.8	83
33	Liquid methanol concentration sensors for direct methanol fuel cells. Journal of Power Sources, 2006, 159, 626-636.	4.0	73
34	Facile fabrication of mesoporous carbon nanofibers with unique hierarchical nanoarchitecture for electrochemical hydrogen storage. International Journal of Hydrogen Energy, 2014, 39, 7859-7867.	3.8	73
35	Fuel cells: A new, efficient and cleaner power source. AICHE Journal, 2001, 47, 1482-1486.	1.8	71
36	Multimodal porous carbon as a highly efficient electrode material in an electric double layer capacitor. Microporous and Mesoporous Materials, 2013, 182, 1-7.	2.2	70

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37	In-plane gradients in fuel cell structure and conditions for higher performance. Journal of Power Sources, 2003, 113, 101-108.	4.0	69
38	Key Considerations for High Current Fuel Cell Catalyst Testing in an Electrochemical Half-Cell. Journal of the Electrochemical Society, 2017, 164, F321-F327.	1.3	68
39	Preparation and electrochemical studies of metalâ€“carbon composite catalysts for small-scale electrosynthesis of H2O2. Electrochimica Acta, 2011, 56, 9074-9081.	2.6	64
40	Gasâ€“liquid two-phase flow patterns in parallel channels for fuel cells. Journal of Power Sources, 2008, 183, 643-650.	4.0	61
41	Dense Pt Nanowire Electrocatalyst for Improved Fuel Cell Performance Using a Graphitic Carbon Nitrideâ€Decorated Hierarchical Nanocarbon Support. Small, 2021, 17, e2102288.	5.2	59
42	Application of boron-doped diamond electrodes for the anodic oxidation of pesticide micropollutants in a water treatment process: a critical review. Environmental Science: Water Research and Technology, 2019, 5, 2090-2107.	1.2	58
43	Investigation of the effect of microporous layers on water management in a proton exchange membrane fuel cell using novel diagnostic methods. International Journal of Hydrogen Energy, 2014, 39, 16390-16404.	3.8	55
44	Facile synthesis, spectroscopy and electrochemical activity of two substituted iron phthalocyanines as oxygen reduction catalysts in an acidic environment. Electrochimica Acta, 2009, 54, 3098-3102.	2.6	48
45	Design and testing of a passive planar three-cell DMFC. Journal of Power Sources, 2007, 164, 287-292.	4.0	45
46	Ta and Nb co-doped TiO₂ and its carbon-hybrid materials for supporting Ptâ€“Pd alloy electrocatalysts for PEM fuel cell oxygen reduction reaction. Journal of Materials Chemistry A, 2014, 2, 12681-12685.	5.2	45
47	Electrochemically Produced Graphene for Microporous Layers in Fuel Cells. ChemSusChem, 2016, 9, 1689-1697.	3.6	45
48	Temperature and pH Dependence of Oxygen Reduction Catalyzed by Iron Fluoroporphyrin Adsorbed on a Graphite Electrode. Journal of the Electrochemical Society, 2005, 152, A2421.	1.3	44
49	Drinking Water Purification by Electrosynthesis of Hydrogen Peroxide in a Powerâ€Producing PEM Fuel Cell. ChemSusChem, 2013, 6, 2137-2143.	3.6	44
50	Nanopillar niobium oxides as support structures for oxygen reduction electrocatalysts. Electrochimica Acta, 2012, 85, 492-500.	2.6	43
51	Anode water removal and cathode gas diffusion layer flooding in a proton exchange membrane fuel cell. International Journal of Hydrogen Energy, 2012, 37, 16093-16103.	3.8	42
52	3D simulations of the impact of two-phase flow on PEM fuel cell performance. Chemical Engineering Science, 2013, 100, 445-455.	1.9	42
53	Gasâ€“liquid two-phase flow distributions in parallel channels for fuel cells. Journal of Power Sources, 2009, 189, 1023-1031.	4.0	40
54	Synthesis of conductive rutile-phased Nb_{0.06}Ti_{0.94}O₂and its supported Pt electrocatalysts (Pt/Nb_{0.06}Ti_{0.94}O₂) for the oxygenreduction reaction. Dalton Transactions, 2012, 41, 1187-1194.	1.6	40

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55	Novel organic redox catalyst for the electroreduction of oxygen to hydrogen peroxide. Electrochimica Acta, 2012, 66, 222-229.	2.6	38
56	Catalytically active sites of MOF-derived electrocatalysts: synthesis, characterization, theoretical calculations, and functional mechanisms. Journal of Materials Chemistry A, 2021, 9, 20320-20344.	5.2	37
57	A Review of Composite/Hybrid Electrocatalysts and Photocatalysts for Nitrogen Reduction Reactions: Advanced Materials, Mechanisms, Challenges and Perspectives. Electrochemical Energy Reviews, 2020, 3, 506-540.	13.1	35
58	Preparation and oxygen reduction activity of stable RuSex/C catalyst with pyrite structure. Electrochimica Acta, 2009, 54, 4297-4304.	2.6	34
59	Application of water barrier layers in a proton exchange membrane fuel cell for improved water management at low humidity conditions. International Journal of Hydrogen Energy, 2011, 36, 3635-3648.	3.8	33
60	Simulations of two-phase flow distribution in communicating parallel channels for a PEM fuel cell. International Journal of Multiphase Flow, 2013, 52, 35-45.	1.6	32
61	Analysis of oxygen evolving catalyst coated membranes with different current collectors using a new modified rotating disk electrode technique. Electrochimica Acta, 2019, 317, 722-736.	2.6	30
62	Novel approach to membraneless direct methanol fuel cells using advanced 3D anodes. Electrochimica Acta, 2008, 53, 6890-6898.	2.6	28
63	Surface plasma-etching treatment of cobalt nanoparticles-embedded honeysuckle-like nitrogen-doped carbon nanotubes to produce high-performance catalysts for rechargeable zinc-air batteries. Journal of Power Sources, 2020, 453, 227858.	4.0	28
64	Two-phase flow pressure drop hysteresis in an operating proton exchange membrane fuel cell. Journal of Power Sources, 2011, 196, 8031-8040.	4.0	27
65	Gasâ€"liquid two-phase flow behavior in minichannels bounded with a permeable wall. Chemical Engineering Science, 2011, 66, 3377-3385.	1.9	27
66	In-situ determination of current density distribution and fluid modeling of an electrocoagulation process and its effects on natural organic matter removal for drinking water treatment. Water Research, 2020, 171, 115404.	5.3	27
67	Impact of cathode additives on the cycling performance of rechargeable alkaline manganese dioxideâ€"zinc batteries for energy storage applications. Journal of Applied Electrochemistry, 2017, 47, 167-181.	1.5	26
68	Imaging Heterogeneous Electrocatalyst Stability and Decoupling Degradation Mechanisms in Operating Hydrogen Fuel Cells. ACS Energy Letters, 2021, 6, 2742-2749.	8.8	26
69	The porous transport layer in proton exchange membrane water electrolysis: perspectives on a complex component. Sustainable Energy and Fuels, 2022, 6, 1824-1853.	2.5	26
70	Synthesis of Pd and Nbâ€"doped TiO2 composite supports and their corresponding Ptâ€"Pd alloy catalysts by a two-step procedure for the oxygen reduction reaction. Journal of Power Sources, 2013, 221, 232-241.	4.0	25
71	Strategies in cell design and operation for the electrosynthesis of ammonia: status and prospects. Energy and Environmental Science, 2022, 15, 2259-2287.	15.6	22
72	Control of variable power conditions for a membraneless direct methanol fuel cell. Journal of Power Sources, 2009, 194, 991-996.	4.0	21

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73	Molecular Analysis of the Unusual Stability of an IrNbO<i>_x</i> Catalyst for the Electrochemical Water Oxidation to Molecular Oxygen (OER). ACS Applied Materials & Interfaces, 2021, 13, 3748-3761.	4.0	20
74	Two-phase flow pressure drop hysteresis in parallel channels of a proton exchange membrane fuel cell. Journal of Power Sources, 2010, 195, 4168-4176.	4.0	17
75	Novel nanowire-structured polypyrrole-cobalt composite as efficient catalyst for oxygen reduction reaction. Scientific Reports, 2016, 6, 20005.	1.6	17
76	Bridging Fundamental Electrochemistry with Applied Fuel Cell Testing: A Novel and Economical Rotating Disk Electrode Tip for Electrochemical Assessment of Catalyst-Coated Membranes. Electrochimica Acta, 2017, 258, 208-219.	2.6	17
77	Pilot-scale iron electrocoagulation treatment for natural organic matter removal. Environmental Technology (United Kingdom), 2020, 41, 577-585.	1.2	17
78	Exploiting water contaminants: In-situ electrochemical generation of ferrates using ambient raw water iron (Fe2+). Journal of Environmental Chemical Engineering, 2020, 8, 103834.	3.3	17
79	A novel single electrode supported direct methanol fuel cell. Electrochemistry Communications, 2009, 11, 1530-1534.	2.3	16
80	Deconvoluting Reversible and Irreversible Degradation Phenomena in OER Catalyst Coated Membranes Using a Modified RDE Technique. Journal of the Electrochemical Society, 2021, 168, 026507.	1.3	16
81	Perforated Metal Sheets as Gas Diffusion Layers for Proton Exchange Membrane Fuel Cells. Electrochemical and Solid-State Letters, 2012, 15, B20.	2.2	15
82	Circumneutral electrosynthesis of ferrate oxidant: An emerging technology for small, remote and decentralised water treatment applications. Current Opinion in Electrochemistry, 2021, 27, 100680.	2.5	15
83	Advancing Direct Liquid Redox Fuel Cells: Mixed-Reactant and In Situ Regeneration Opportunities. Journal of the Electrochemical Society, 2010, 157, B529.	1.3	14
84	Analytical quantification of aqueous permanganate: Direct and indirect spectrophotometric determination for water treatment processes. Chemosphere, 2020, 251, 126626.	4.2	14
85	Gas flow rate distributions in parallel minichannels for polymer electrolyte membrane fuel cells: Experiments and theoretical analysis. Journal of Power Sources, 2010, 195, 3231-3239.	4.0	13
86	Photocatalytic Hydrogen Production in a UV-irradiated Fluidized Bed Reactor. Energy Procedia, 2012, 29, 513-521.	1.8	13
87	A membrane-based electrochemical flow reactor for generation of ferrates at near neutral pH conditions. Reaction Chemistry and Engineering, 2019, 4, 1116-1125.	1.9	13
88	One-Dimensional Model for a Direct Methanol Fuel Cell with a 3D Anode Structure. Journal of the Electrochemical Society, 2011, 158, B29.	1.3	12
89	A circulating electrolyte for a high performance carbon-based dye-sensitized solar cell. Chemical Communications, 2017, 53, 5561-5564.	2.2	12
90	Electrosynthesis of ferrate in a batch reactor at neutral conditions for drinking water applications. Canadian Journal of Chemical Engineering, 2018, 96, 1648-1655.	0.9	12

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91	Antimony-Doped Tin Oxide Nanofibers as Catalyst Support Structures for the Methanol Oxidation Reaction in Direct Methanol Fuel Cells. Electrocatalysis, 2019, 10, 262-271.	1.5	12
92	Upgrading the Stateâ€ofâ€theâ€Art Electrocatalysts for Proton Exchange Membrane Fuel Cell Applications. Advanced Materials Interfaces, 2022, 9, .	1.9	12
93	Carbon-Supported Pt Hollow Nanospheres as a Highly Efficient Electrocatalyst for the Oxygen Reduction Reaction. Electrocatalysis, 2016, 7, 336-344.	1.5	11
94	Design of bifunctional electrodes for co-generation of electrical power and hydrogen peroxide. Journal of Applied Electrochemistry, 2018, 48, 985-993.	1.5	11
95	Relationship between Electroless Pt Nanoparticle Growth and Interconnectivity at the Membrane Interface: Implications for Fuel Cell Applications. ACS Applied Nano Materials, 2019, 2, 3127-3137.	2.4	11
96	Advanced electrochemical oxidation for the simultaneous removal of manganese and generation of permanganate oxidant. Environmental Science: Water Research and Technology, 2020, 6, 2405-2415.	1.2	11
97	Degradation of ferrate species produced electrochemically for use in drinking water treatment applications. Canadian Journal of Chemical Engineering, 2018, 96, 1045-1052.	0.9	10
98	High Fuel Concentration Direct-Liquid Fuel Cell with a Redox Couple Cathode. Journal of the Electrochemical Society, 2008, 155, B1322.	1.3	9
99	New Reference Electrode Approach for Fuel Cell Performance Evaluation. ECS Transactions, 2008, 16, 1915-1926.	0.3	9
100	Improved performance of the direct methanol redox fuel cell. Journal of Applied Electrochemistry, 2010, 40, 2125-2133.	1.5	8
101	Production of Hydrogen Peroxide for Drinking Water Treatment in a Proton Exchange Membrane Electrolyzer at Near-Neutral pH. Journal of the Electrochemical Society, 2020, 167, 044502.	1.3	8
102	Rational Design of Multimodal Porous Carbon for the Interfacial Microporous Layer of Fuel Cell Oxygen Electrodes. ACS Applied Materials & Interfaces, 2022, 14, 9084-9096.	4.0	8
103	Benefits of platinum deposited in the polymer membrane subsurface on the operational flexibility of hydrogen fuel cells. Journal of Power Sources, 2020, 471, 228418.	4.0	7
104	Engineered Gas Diffusion Layers for Proton Exchange Membrane Fuel Cells. ECS Transactions, 2009, 25, 1507-1518.	0.3	6
105	Gasâ˜'Liquid Two-Phase Flow in Minichannels with Liquid Side Introduction. Industrial & Engineering Chemistry Research, 2010, 49, 6709-6721.	1.8	6
106	Simple and Scalable Synthesis of Vertically Aligned Anatase Nanowires for Enhanced Photoelectrochemical Performance. ACS Applied Energy Materials, 2020, 3, 8317-8329.	2.5	6
107	Novel Dithiolene Nickel Complex Catalysts for Electrochemical Hydrogen Evolution Reaction for Hydrogen Production in Nonaqueous and Aqueous Solutions. Electrocatalysis, 2022, 13, 230.	1.5	6
108	Frequency Analysis of Water Electrolysis Current Fluctuations in a PEM Flow Cell: Insights into Bubble Nucleation and Detachment. Journal of the Electrochemical Society, 2022, 169, 054531.	1.3	6

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109	Nafion Film-Templated Platinum Electrodes for Oxygen Reduction. Electrocatalysis, 2010, 1, 22-27.	1.5	5
110	No Evidence of Benefits of Host Nano-Carbon Materials for Practical Lithium Anode-Free Cells. Nanomaterials, 2022, 12, 1413.	1.9	5
111	Conversion of saline waste-water and gaseous carbon dioxide to (bi)carbonate salts, hydrochloric acid and desalinated water for on-site industrial utilization. Reaction Chemistry and Engineering, 2019, 4, 141-150.	1.9	4
112	Advanced titanium dioxide fluidizable nanowire photocatalysts. RSC Advances, 2022, 12, 4240-4252.	1.7	4
113	Modified New Microporous Carbon Layer Structure for Improved PEM Fuel Cell Performance with Low-Pt Catalyst Loadings. Journal of the Electrochemical Society, 2021, 168, 104513.	1.3	3
114	High Fuel Concentration Direct Liquid Fuel Cell with Redox Couple Cathode. ECS Transactions, 2009, 16, 1549-1560.	0.3	2
115	The Use of the Anode Water Removal Method to Understand Cathode Gas Diffusion Layer Flooding. , 2012, , .		2
116	Electrochemical Activation of Mn₃O₄ (Hausmannite) for a Rechargeable Aqueous Zn/Mn-Oxide Battery for Energy Storage Applications. , 2019, , .		1
117	Modeling study of an airâ€breathing micro direct methanol fuel cell with an extended anode catalyst region. International Journal of Energy Research, 2021, 45, 9083-9098.	2.2	1
118	3-D Numerical Simulation of Gas-Liquid Flow in a Minichannel With a Non-Uniform GDL Surface. , 2010, , .		0
119	An Analysis of Two-Phase Flow Pressure Drop in Operating Proton Exchange Membrane Fuel Cell Channels With the Lockhart-Martinelli Approach. , 2014, , .		0
120	Aging mechanisms and lifetime of PEFC and DMFC. , 2005, , 503-516.		0
121	Development and Characterization of a Micro Redox Fuel Cell. Journal of the Electrochemical Society, 2020, 167, 114514.	1.3	0