Dirk Henkensmeier

List of Publications by Year
in descending order

122	4,178	109137	143772
papers	citations	35 h-index	57 g-index

124	124	124	3316
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Overview: State-of-the Art Commercial Membranes for Anion Exchange Membrane Water Electrolysis. Journal of Electrochemical Energy Conversion and Storage, 2021, 18, .	1.1	160
2	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.	2.2	146
3	From polybenzimidazoles to polybenzimidazoliums and polybenzimidazolides. Journal of Materials Chemistry A, 2020, 8, 12854-12886.	5.2	133
4	Redox Flow Batteries for Energy Storage: A Technology Review. Journal of Electrochemical Energy Conversion and Storage, 2018, 15, .	1.1	123
5	Development of electrodeposited IrO2 electrodes as anodes in polymer electrolyte membrane water electrolysis. Applied Catalysis B: Environmental, 2015, 179, 285-291.	10.8	118
6	Vanadium Redox Flow Batteries Using meta-Polybenzimidazole-Based Membranes of Different Thicknesses. ACS Applied Materials & Interfaces, 2017, 9, 36799-36809.	4.0	114
7	Polybenzimidazole (PBI-OO) based composite membranes using sulfophenylated TiO2 as both filler and crosslinker, and their use in the HT-PEM fuel cell. Journal of Membrane Science, 2018, 560, 11-20.	4.1	109
8	Polybenzimidazolium hydroxides â€“ Structure, stability and degradation. Polymer Degradation and Stability, 2012, 97, 264-272.	2.7	98
9	Alkaline anion exchange membrane water electrolysis: Effects of electrolyte feed method and electrode binder content. Journal of Power Sources, 2018, 382, 22-29.	4.0	96
10	Polybenzimidazole-Based High-Temperature Polymer Electrolyte Membrane Fuel Cells: New Insights and Recent Progress. Electrochemical Energy Reviews, 2020, 3, 793-845.	13.1	92
11	Porous-Nafion/PBI composite membranes and Nafion/PBI blend membranes for vanadium redox flow batteries. Applied Surface Science, 2018, 450, 301-311.	3.1	85
12	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.	2.9	85
13	Polybenzimidazoliumâ€Based Solid Electrolytes. Macromolecular Materials and Engineering, 2011, 296, 899-908.	1.7	82
14	Phosphoric acid doped crosslinked polybenzimidazole (PBI-OO) blend membranes for high temperature polymer electrolyte fuel cells. Journal of Membrane Science, 2017, 544, 416-424.	4.1	80
15	Thermal crosslinking of PBI/sulfonated polysulfone based blend membranes. Journal of Materials Chemistry A, 2017, 5, 409-417.	5.2	78
16	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.	10.8	77
17	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.	10.8	76
18	Polarization characteristics of a low catalyst loading PEM water electrolyzer operating at elevated temperature. Journal of Power Sources, 2016, 309, 127-134.	4.0	68

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19	Oneâ€Step Cationic Grafting of 4â€Hydroxyâ€TEMPO and its Application in a Hybrid Redox Flow Battery with a Crosslinked PBI Membrane. ChemSusChem, 2017, 10, 3193-3197.	3.6	62
20	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.	4.1	60
21	Blending polybenzimidazole with an anion exchange polymer increases the efficiency of vanadium redox flow batteries. Journal of Membrane Science, 2019, 580, 110-116.	4.1	59
22	Sulfonated poly(ether sulfone)/sulfonated polybenzimidazole blend membrane for fuel cell applications. European Polymer Journal, 2010, 46, 1633-1641.	2.6	58
23	Layered composite membranes based on porous PVDF coated with a thin, dense PBI layer for vanadium redox flow batteries. Journal of Membrane Science, 2019, 591, 117333.	4.1	56
24	Anion conducting polymers based on ether linked polybenzimidazole (PBI-OO). International Journal of Hydrogen Energy, 2014, 39, 2842-2853.	3.8	55
25	Factors in electrode fabrication for performance enhancement of anion exchange membrane water electrolysis. Journal of Power Sources, 2017, 347, 283-290.	4.0	54
26	Anion exchange membrane water electrolyzer with an ultra-low loading of Pt-decorated Ni electrocatalyst. Applied Catalysis B: Environmental, 2016, 180, 674-679.	10.8	47
27	Protic ionic liquids immobilized in phosphoric acid-doped polybenzimidazole matrix enable polymer electrolyte fuel cell operation at 200ÂÂ°C. Journal of Membrane Science, 2020, 608, 118188.	4.1	47
28	Anion-conductive membranes based on 2-mesityl-benzimidazolium functionalised poly(2,6-dimethyl-1,4-phenylene oxide) and their use in alkaline water electrolysis. Polymer, 2018, 145, 242-251.	1.8	44
29	Thermally crosslinked sulfonated polybenzimidazole membranes and their performance in high temperature polymer electrolyte fuel cells. Journal of Membrane Science, 2019, 588, 117218.	4.1	44
30	Shifting redox potential of nitroxyl radical by introducing an imidazolium substituent and its use in aqueous flow batteries. Journal of Power Sources, 2019, 418, 11-16.	4.0	44
31	â€œWater-in-ionic liquidâ€•solutions towards wide electrochemical stability windows for aqueous rechargeable batteries. Electrochimica Acta, 2018, 263, 47-52.	2.6	43
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.	3.8	41
33	Iron-vanadium redox flow batteries with polybenzimidazole membranes: High coulomb efficiency and low capacity loss. Journal of Power Sources, 2019, 439, 227079.	4.0	41
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.	3.8	40
35	Polybenzimidazole / tetrazole-modified poly(arylene ether) blend membranes for high temperature proton exchange membrane fuel cells. Journal of Membrane Science, 2020, 614, 118494.	4.1	40
36	Synthesis, characterisation and degradability of polyamides derived from aldaric acids and chain end functionalised polydimethylsiloxanes. Polymer, 2004, 45, 7053-7059.	1.8	38

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37	Optimizing the performance of meta-polybenzimidazole membranes in vanadium redox flow batteries by adding an alkaline pre-swelling step. Chemical Engineering Journal, 2021, 407, 126574.	6.6	38
38	Novel ETFE based radiation grafted poly(styrene sulfonic acid-co-methacrylonitrile) proton conducting membranes with increased stability. Electrochemistry Communications, 2009, 11, 941-944.	2.3	37
39	Enhanced CO2 reduction activity of polyethylene glycol-modified Au nanoparticles prepared via liquid medium sputtering. Applied Catalysis B: Environmental, 2018, 237, 673-680.	10.8	35
40	Application of TGA techniques to analyze the compositional and structural degradation of PEMFC MEAs. Polymer Degradation and Stability, 2012, 97, 1010-1016.	2.7	34
41	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.	2.3	34
42	Application of spirobiindane-based microporous poly(ether sulfone)s as polymeric binder on solid alkaline exchange membrane fuel cells. Journal of Membrane Science, 2018, 568, 67-75.	4.1	34
43	Synthesis and Characterisation of Terminal Carbohydrate Modified Poly(dimethylsiloxane)s. Macromolecular Chemistry and Physics, 2004, 205, 1851-1857.	1.1	33
44	Demonstration of a 20ÂW class high-temperature polymer electrolyte fuel cell stack with novel fabrication of a membrane electrode assembly. International Journal of Hydrogen Energy, 2011, 36, 5521-5526.	3.8	32
45	Influence of Different Side-groups and Cross-links on Phosphoric Acid Doped Radel-based Polysulfone Membranes for High Temperature Polymer Electrolyte Fuel Cells. Electrochimica Acta, 2017, 224, 306-313.	2.6	32
46	Improved All-Vanadium Redox Flow Batteries using Catholyte Additive and a Cross-linked Methylated Polybenzimidazole Membrane. ACS Applied Energy Materials, 2018, 1, 6047-6055.	2.5	32
47	Unlocking Simultaneously the Temperature and Electrochemical Windows of Aqueous Phthalocyanine Electrolytes. ACS Applied Energy Materials, 2019, 2, 3773-3779.	2.5	32
48	Sulfonation of PIM-1 â€" towards highly oxygen permeable binders for fuel cell application. Macromolecular Research, 2014, 22, 92-98.	1.0	31
49	Phosphate adsorption and its effect on oxygen reduction reaction for PtxCoy alloy and Aucoreâ€"Ptshell electrocatalysts. Electrochimica Acta, 2011, 56, 8802-8810.	2.6	30
50	meta-PBI/methylated PBI-OO blend membranes for acid doped HT PEMFC. European Polymer Journal, 2014, 58, 135-143.	2.6	30
51	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.	2.6	30
52	Polybenzimidazole membranes functionalised with 1-methyl-2-mesitylbenzimidazolium ions via a hexyl linker for use in vanadium flow batteries. Polymer, 2019, 174, 210-217.	1.8	29
53	Characterizations of polybenzimidazole based electrochemical hydrogen pumps with various Pt loadings for H2/CO2 gas separation. International Journal of Hydrogen Energy, 2013, 38, 14816-14823.	3.8	28
54	Tetrazole substituted polymers for high temperature polymer electrolyte fuel cells. Journal of Materials Chemistry A, 2015, 3, 14389-14400.	5.2	28

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55	Imidazole based ionenes, their blends with PBI-OO and applicability as membrane in a vanadium Redox flow battery. European Polymer Journal, 2017, 96, 383-392.	2.6	28
56	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.	3.8	27
57	Poly(arylene ether sulfone) with tetra(quaternary ammonium) moiety in the polymer repeating unit for application in solid alkaline exchange membrane fuel cells. International Journal of Hydrogen Energy, 2014, 39, 21223-21230.	3.8	27
58	Nafion membranes with a sulfonated organic additive for the use in vanadium redox flow batteries. Journal of Applied Polymer Science, 2019, 136, 47547.	1.3	26
59	Synthesis and characterization of poly(benzimidazolium) membranes for anion exchange membrane fuel cells. Polymer Bulletin, 2013, 70, 2619-2631.	1.7	25
60	Novel sulfonated poly(arylene ether sulfone) containing hydroxyl groups for enhanced proton exchange membrane properties. Polymer Chemistry, 2015, 6, 233-239.	1.9	25
61	Polybenzimidazole membranes for vanadium redox flow batteries: Effect of sulfuric acid doping conditions. Chemical Engineering Journal, 2022, 435, 134902.	6.6	25
62	Ionic polymer actuator based on anion-conducting methylated ether-linked polybenzimidazole. Sensors and Actuators B: Chemical, 2015, 214, 43-49.	4.0	24
63	Porous Nafion membranes. Journal of Membrane Science, 2016, 520, 723-730.	4.1	24
64	Radiation grafted ETFE-graft-poly(Î±-methylstyrenesulfonic acid-co-methacrylonitrile) membranes for fuel cell applications. Journal of Membrane Science, 2013, 447, 228-235.	4.1	23
65	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.	3.8	23
66	PBI nanofiber mat-reinforced anion exchange membranes with covalently linked interfaces for use in water electrolysers. Journal of Membrane Science, 2021, 640, 119832.	4.1	23
67	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.	4.1	22
68	Nafion membranes with a porous surface. Journal of Membrane Science, 2014, 460, 199-205.	4.1	20
69	Reduced In-Plane Swelling of Nafion by a Biaxial Modification Process. Macromolecular Chemistry and Physics, 2015, 216, 1235-1243.	1.1	20
70	Synthesis of carbohydrate-segmented polydimethylsiloxanes by hydrosilylation. Journal of Polymer Science Part A, 2005, 43, 3814-3822.	2.5	19
71	Nanocomposite Membranes for Polymer Electrolyte Fuel Cells. Macromolecular Materials and Engineering, 2014, 299, 1031-1041.	1.7	19
72	Blue membranes: Sulfonated copper(II) phthalocyanine tetrasulfonic acid based composite membranes for DMFC and low relative humidity PEMFC. Journal of Membrane Science, 2016, 502, 1-10.	4.1	19

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73	Radel-based membranes with pyridine and imidazole side groups for high temperature polymer electrolyte fuel cells. Solid State Ionics, 2015, 275, 80-85.	1.3	18
74	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.	1.6	17
75	Novel O-glycosyl amino acid mimetics as building blocks for O-glycopeptides act as inhibitors of galactosidases. Bioorganic and Medicinal Chemistry Letters, 2004, 14, 73-75.	1.0	16
76	Enhanced reaction kinetics of an aqueous Znâ€“Fe hybrid flow battery by optimizing the supporting electrolytes. Journal of Energy Storage, 2019, 25, 100883.	3.9	16
77	Highly active and CO2 tolerant Ir nanocatalysts for H2/CO2 separation in electrochemical hydrogen pumps. Applied Catalysis B: Environmental, 2014, 158-159, 348-354.	10.8	15
78	Design Strategy for Zinc Anodes with Enhanced Utilization and Retention: Electrodeposited Zinc Oxide on Carbon Mesh Protected by Ionomeric Layers. ACS Applied Energy Materials, 0, , .	2.5	15
79	High temperature polymer electrolyte membrane fuel cells with Polybenzimidazole-Ce0.9Gd0.1P2O7 and polybenzimidazole-Ce0.9Gd0.1P2O7-graphite oxide composite electrolytes. Journal of Power Sources, 2018, 401, 149-157.	4.0	15
80	Polystyrene-Based Hydroxide-Ion-Conducting Ionomer: Binder Characteristics and Performance in Anion-Exchange Membrane Fuel Cells. Polymers, 2021, 13, 690.	2.0	14
81	Locally confined membrane modification of sulfonated membranes for fuel cell application. Journal of Membrane Science, 2014, 454, 174-183.	4.1	13
82	Phase Separated Methylated Polybenzimidazole (Oâ€PBI) Based Anion Exchange Membranes. Macromolecular Materials and Engineering, 2015, 300, 497-509.	1.7	13
83	Phosphoric acid doped polysulfone membranes with aminopyridine pendant groups and imidazole cross-links. European Polymer Journal, 2015, 72, 102-113.	2.6	13
84	Facile preparation of a long-term durable nano- and micro-structured polymer blend membrane for a proton exchange membrane fuel cell. RSC Advances, 2016, 6, 46516-46522.	1.7	13
85	Ultrathin layered Pd/PBIâ€“HFA composite membranes for hydrogen separation. Separation and Purification Technology, 2017, 179, 486-493.	3.9	13
86	Imidazolium cation enabled reversibility of a hydroquinone derivative for designing aqueous redox electrolytes. Sustainable Energy and Fuels, 2020, 4, 2998-3005.	2.5	13
87	Copolymer synergistic coupling for chemical stability and improved gas barrier properties of a polymer electrolyte membrane for fuel cell applications. International Journal of Hydrogen Energy, 2020, 45, 7059-7068.	3.8	13
88	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.	1.3	12
89	Synthesis of high molecular weight polybenzimidazole using a highly pure monomer under mild conditions. Polymer International, 2017, 66, 1812-1818.	1.6	12
90	Polyethylenimineâ€assisted Synthesis of Au Nanoparticles for Efficient Syngas Production. Electroanalysis, 2019, 31, 1401-1408.	1.5	12

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91	Partially methylated polybenzimidazoles as coating for alkaline zinc anodes. Journal of Membrane Science, 2020, 610, 118254.	4.1	12
92	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.	1.0	11
93	Synthesis and characterization of fluoreneâ€based polybenzimidazole copolymer for gas separation. Journal of Applied Polymer Science, 2014, 131, .	1.3	11
94	Base tolerant polybenzimidazolium hydroxide membranes for solid alkaline-exchange membrane fuel cells. Journal of Membrane Science, 2016, 514, 398-406.	4.1	11
95	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.	1.0	11
96	Anion conducting methylated aliphatic <scp>PBI</scp> and its calculated properties. Journal of Polymer Science, Part B: Polymer Physics, 2017, 55, 256-265.	2.4	11
97	Shape memory effect in radiation grafted ion exchange membranes. Journal of Materials Chemistry A, 2014, 2, 9482.	5.2	10
98	Gel Electrolytes of Covalent Network Polybenzimidazole and Phosphoric Acid by Direct Casting. Macromolecular Materials and Engineering, 2017, 302, 1700347.	1.7	10
99	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
100	Sulfonated Copper Phthalocyanine/Sulfonated Polysulfone Composite Membrane for Ionic Polymer Actuators with High Power Density and Fast Response Time. ACS Applied Materials & Interfaces, 2017, 9, 29063-29070.	4.0	9
101	Fabrication of dense Ce0.9Mg0.1P2O7-PmOn composites by microwave heating for application as electrolyte in intermediate-temperature fuel cells. Ceramics International, 2018, 44, 6170-6175.	2.3	9
102	Synthesis and Characterization of H3PO4Doped Poly(benzimidazole-co-benzoxazole) Membranes for High Temperature Polymer Electrolyte Fuel Cells. Bulletin of the Korean Chemical Society, 2012, 33, 3279-3284.	1.0	9
103	Nanostructureâ€property relationship of two perfluorinated sulfonic acid (<scp>PFSA</scp>) membranes. International Journal of Energy Research, 2022, 46, 11265-11277.	2.2	9
104	Aziridine ring opening as regio- and stereoselective access to O-glycosyl amino acids and their transformation into O-glycopeptide mimetics. Tetrahedron: Asymmetry, 2009, 20, 902-909.	1.8	8
105	Effect of Se modification on RuSey/C electrocatalyst for oxygen reduction with phosphoric acid. Electrochemistry Communications, 2013, 27, 46-49.	2.3	8
106	Alkyl chain modified sulfonated poly(ether sulfone) for fuel cell applications. International Journal of Hydrogen Energy, 2013, 38, 2889-2899.	3.8	8
107	Dual exchange membrane fuel cell with sequentially aligned cation and anion exchange membranes for non-humidified operation. Journal of Membrane Science, 2020, 596, 117745.	4.1	8
108	Spirobiindane-Based Poly(arylene ether sulfone) Ionomers for Alkaline Anion Exchange Membrane Fuel Cells. Macromolecular Research, 2020, 28, 275-281.	1.0	8

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109	Effect of Molecular Structure and Coordinating Ions on the Solubility and Electrochemical Behavior of Quinone Derivatives for Aqueous Redox Flow Batteries. Journal of the Electrochemical Society, 2020, 167, 160502.	1.3	8
110	TGA-GC/MS -an Adjuvant Tool for Analysis of Polymer Membranes Designed for Fuel Cell Use. Procedia Engineering, 2012, 44, 1310-1314.	1.2	6
111	Synthesis of high molecular weight sulfonated poly(arylene ether sulfone) copolymer without azeotropic reaction. Solid State Ionics, 2015, 275, 92-96.	1.3	6
112	Sintering and electrical behavior of ZrP2O7â€“CeP2O7 solid solutions Zr1-xCexP2O7; xâ€‰=â€‰0â€“0.2 and (Zr0.92Y0.08)1-yCeyP2O7; yâ€‰=â€‰0â€“0.1 for application as electrolyte in intermediate temperature fuel cells. Ionics, 2019, 25, 155-162.	2.2	6
113	Alkaline naphthoquinoneâ€based redox flow batteries with a crosslinked sulfonated polyphenylsulfone membrane. International Journal of Energy Research, 2022, 46, 12988-13002.	2.2	6
114	Crosslinked monosulfonated poly(arylene ether) using cyclodimerization of trifluorovinyl ether groups for fuel cell applications. Polymer International, 2011, 60, 685-691.	1.6	5
115	Effect of PBI-HFA surface treatments on Pd/PBI-HFA composite gas separation membranes. International Journal of Hydrogen Energy, 2017, 42, 22915-22924.	3.8	5
116	Synthesis of Sulfonated Poly(Arylene Ether Sulfone)s Containing Aliphatic Moieties for Effective Membrane Electrode Assembly Fabrication by Low-Temperature Decal Transfer Methods. Polymers, 2021, 13, 1713.	2.0	5
117	Analysis of the spatially distributed performance degradation of a polymer electrolyte membrane fuel cell stack. International Journal of Hydrogen Energy, 2014, 39, 16548-16555.	3.8	2
118	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.	1.3	2
119	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.	3.8	2
120	Special Section on Anion Exchange Membranes and AEM-Based Systems. Journal of Electrochemical Energy Conversion and Storage, 2017, 14, .	1.1	1
121	Novel O-Glycosyl Amino Acid Mimetics as Building Blocks for O-Glycopeptides Act as Inhibitors of Galactosidases.. ChemInform, 2004, 35, no.	0.1	0
122	Extending operational range. Nature Energy, 0, , .	19.8	0