Simon Thiele

List of Publications by Year
in descending order

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110 papers	4,089 citations	76196 40 h-index	128067 60 g-index
113 all docs	113 docs citations	113 times ranked	4034 citing authors

#	Article	IF	Citations
1	Electrochemical- and mechanical stability of catalyst layers in anion exchange membrane water electrolysis. International Journal of Hydrogen Energy, 2022, 47, 4304-4314.	3.8	28
2	An Artificial SEI Layer Based on an Inorganic Coordination Polymer with Selfâ€Healing Ability for Longâ€Lived Rechargeable Lithiumâ€Metal Batteries. Batteries and Supercaps, 2022, 5, .	2.4	8
3	Anion-Exchange Membrane Water Electrolyzers. Chemical Reviews, 2022, 122, 11830-11895.	23.0	177
4	Oxygen Reduction Reaction in Alkaline Media Causes Iron Leaching from Feâ€“Nâ€“C Electrocatalysts. Journal of the American Chemical Society, 2022, 144, 9753-9763.	6.6	59
5	Active solution heating and cooling in electrospinning enabling spinnability from various solvents. Journal of Applied Polymer Science, 2022, 139, .	1.3	3
6	Catalyst Dissolution Analysis in PEM Water Electrolyzers during Intermittent Operation. ECS Meeting Abstracts, 2022, MA2022-01, 1369-1369.	0.0	1
7	The Interplay of Oxygen Reduction Reaction and Iron Dissolution from Fe-N-C Electrocatalysts. ECS Meeting Abstracts, 2022, MA2022-01, 1486-1486.	0.0	0
8	Novel Sulfonated and Phosphonated Ionomers and Ionomer (blend) Membranes for Electrochemical Applications. ECS Meeting Abstracts, 2022, MA2022-01, 1413-1413.	0.0	0
9	Novel Anion-Exchange Blend Membranes Comprised of a Commercially Available & Water-Soluble Ionomer for All-Vanadium Redox Flow Batteries. ECS Meeting Abstracts, 2022, MA2022-01, 1408-1408.	0.0	0
10	Catalyst Development for the Electrochemical Oxidation of Isopropanol in LOHC Fuel Cells. ECS Meeting Abstracts, 2022, MA2022-01, 1705-1705.	0.0	0
11	Quaternized Polybenzimidazole-Cross-Linked Poly(vinylbenzyl chloride) Membranes and Their Performance in HT-PEMFCs. ECS Meeting Abstracts, 2022, MA2022-01, 1411-1411.	0.0	0
12	Critical Advances in Ambient Air Operation of Nonaqueous Rechargeable Liâ€“Air Batteries. Small, 2021, 17, e1903854.	5.2	45
13	On the effect of anion exchange ionomer binders in bipolar electrode membrane interface water electrolysis. Journal of Materials Chemistry A, 2021, 9, 14285-14295.	5.2	27
14	The influence of the anion exchange membrane on mass-transport limiting phenomena in bipolar interface fuel cells with Feâ€“N/C based cathode catalyst layers. RSC Advances, 2021, 11, 31477-31486.	1.7	4
15	Platinum Dissolution in Realistic Fuel Cell Catalyst Layers. Angewandte Chemie, 2021, 133, 8964-8970.	1.6	13
16	Bipolarâ€Interface Hydrogen Fuel Cells: A Review and Perspective on Future Highâ€Performance, Low Platinumâ€Group Metal Content Designs. ChemElectroChem, 2021, 8, 1430-1447.	1.7	6
17	Activation of electrospun carbon fibers: the effect of fiber diameter on CO2 and steam reaction kinetics. Journal of Polymer Research, 2021, 28, 1.	1.2	4
18	Platinum Dissolution in Realistic Fuel Cell Catalyst Layers. Angewandte Chemie - International Edition, 2021, 60, 8882-8888.	7.2	63

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19	On the limitations in assessing stability of oxygen evolution catalysts using aqueous model electrochemical cells. Nature Communications, 2021, 12, 2231.	5.8	100
20	Photocorrosion of WO₃ Photoanodes in Different Electrolytes. ACS Physical Chemistry Au, 2021, 1, 6-13.	1.9	30
21	Bipolar Membrane Electrode Assemblies for Water Electrolysis â€“ Goals and Challenges. ECS Meeting Abstracts, 2021, MA2021-01, 1230-1230.	0.0	0
22	Spatially and temporally resolved monitoring of doping polybenzimidazole membranes with phosphoric acid. Journal of Membrane Science, 2021, 625, 119145.	4.1	7
23	Monitoring of Doping Polybenzimidazole Membranes with Phosphoric Acid: Insights with Spatial and Temporal Resolution. ECS Meeting Abstracts, 2021, MA2021-01, 1981-1981.	0.0	0
24	Amorphous Carbon Coatings for Total Knee Replacementsâ€”Part II: Tribological Behavior. Polymers, 2021, 13, 1880.	2.0	16
25	Amorphous Carbon Coatings for Total Knee Replacementsâ€”Part I: Deposition, Cytocompatibility, Chemical and Mechanical Properties. Polymers, 2021, 13, 1952.	2.0	19
26	The 2â€Ppropanol Fuel Cell: A Review from the Perspective of a Hydrogen Energy Economy. Energy Technology, 2021, 9, 2100164.	1.8	19
27	Impact of catalyst loading, ionomer content, and carbon support on the performance of direct isopropanol fuel cells. Journal of Power Sources Advances, 2021, 10, 100064.	2.6	7
28	Communicationâ€”Proving the Importance of Pt-Interlayer Position in PEMWE Membranes for the Effective Reduction of the Anodic Hydrogen Content. Journal of the Electrochemical Society, 2021, 168, 094509.	1.3	6
29	Evaluation of the Efficiency of an Elevated Temperature Proton Exchange Membrane Water Electrolysis System. Journal of the Electrochemical Society, 2021, 168, 094504.	1.3	15
30	Understanding the activity transport nexus in water and CO2 electrolysis: State of the art, challenges and perspectives. Chemical Engineering Journal, 2021, 424, 130501.	6.6	38
31	Essentials of High Performance Water Electrolyzers â€“ From Catalyst Layer Materials to Electrode Engineering. Advanced Energy Materials, 2021, 11, 2101998.	10.2	92
32	H+-Conducting Aromatic Multiblock Copolymer and Blend Membranes and Their Application in PEM Electrolysis. Polymers, 2021, 13, 3467.	2.0	2
33	On the Correlation between the Oxygen in Hydrogen Content and the Catalytic Activity of Cathode Catalysts in PEM Water Electrolysis. ECS Meeting Abstracts, 2021, MA2021-02, 1248-1248.	0.0	0
34	Ideal Positioning of a Pt-Interlayer for H2-O2-Recombination in Polymer Electrolyte Membrane Water Electrolysis. ECS Meeting Abstracts, 2021, MA2021-02, 1250-1250.	0.0	0
35	Performance of Quaternized Polybenzimidazole-Cross-Linked Poly(vinylbenzyl chloride) Membranes in HT-PEMFCs. ACS Applied Materials & Interfaces, 2021, 13, 56584-56596.	4.0	25
36	Evaluation of the Efficiency of a High Temperature Proton Exchange Membrane Water Electrolysis System. ECS Meeting Abstracts, 2021, MA2021-02, 1105-1105.	0.0	0

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37	Directly coated membrane electrode assemblies for proton exchange membrane water electrolysis. Electrochemistry Communications, 2020, 110, 106640.	2.3	40
38	Stabilization of Liâ€“S batteries with a lean electrolyte via ion-exchange trapping of lithium polysulfides using a cationic, polybenzimidazolium binder. Sustainable Energy and Fuels, 2020, 4, 1180-1190.	2.5	15
39	FIB/SEM tomography segmentation by optical flow estimation. Ultramicroscopy, 2020, 219, 113090.	0.8	16
40	High performance direct organic fuel cell using the acetone/isopropanol liquid organic hydrogen carrier system. Electrochemistry Communications, 2020, 118, 106786.	2.3	29
41	Bipolar Membrane Electrode Assemblies for Water Electrolysis. ACS Applied Energy Materials, 2020, 3, 9635-9644.	2.5	91
42	Fabrication of a Robust PEM Water Electrolyzer Based on Nonâ€Noble Metal Cathode Catalyst: [Mo₃S₁₃]^{2â^'} Clusters Anchored to Nâ€Doped Carbon Nanotubes. Small, 2020, 16, e2003161.	5.2	50
43	Improved Hydrogen Oxidation Reaction Activity and Stability of Buried Metal-Oxide Electrocatalyst Interfaces. Chemistry of Materials, 2020, 32, 7716-7724.	3.2	38
44	Serial section Raman tomography with 10 times higher depth resolution than confocal Raman microscopy. Journal of Raman Spectroscopy, 2020, 51, 1160-1171.	1.2	5
45	Fuel cell catalyst layer evaluation using a gas diffusion electrode half-cell: Oxygen reduction reaction on Fe-N-C in alkaline media. Electrochemistry Communications, 2020, 116, 106761.	2.3	34
46	Bipolar-interface fuel cells â€“ an underestimated membrane electrode assembly concept for PGM-free ORR catalysts. Sustainable Energy and Fuels, 2020, 4, 2508-2518.	2.5	15
47	Tomographic Reconstruction and Analysis of a Silver CO₂ Reduction Cathode. Advanced Energy Materials, 2020, 10, 2000488.	10.2	16
48	IrO2 coated TiO2 core-shell microparticles advance performance of low loading proton exchange membrane water electrolyzers. Applied Catalysis B: Environmental, 2020, 269, 118762.	10.8	98
49	Quantitative synchrotron X-ray tomography of the material-tissue interface in rat cortex implanted with neural probes. Scientific Reports, 2019, 9, 7646.	1.6	12
50	Evaluations of Concepts for the Integration of Fuel Cells in Liquid Organic Hydrogen Carrier Systems. Energy & Fuels, 2019, 33, 10324-10330.	2.5	43
51	Impact of Carbon Support Corrosion on Performance Losses in Polymer Electrolyte Membrane Fuel Cells. Journal of the Electrochemical Society, 2019, 166, F956-F962.	1.3	22
52	From Catalyst Coated Membranes to Porous Transport Electrode Based Configurations in PEM Water Electrolyzers. Journal of the Electrochemical Society, 2019, 166, F1070-F1078.	1.3	51
53	30â€Î¼m thin hexamethyl-p-terphenyl poly(benzimidazolium) anion exchange membrane for vanadium redox flow batteries. Electrochemistry Communications, 2019, 102, 37-40.	2.3	24
54	Local hydration in ionomer composite membranes determined with confocal Raman microscopy. Journal of Membrane Science, 2019, 585, 126-135.	4.1	11

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55	Spatially Resolved Quantification of Ionomer Degradation in Fuel Cells by Confocal Raman Microscopy. Journal of the Electrochemical Society, 2019, 166, F3044-F3051.	1.3	15
56	Evaluating Electrocatalysts at Relevant Currents in a Half-Cell: The Impact of Pt Loading on Oxygen Reduction Reaction. Journal of the Electrochemical Society, 2019, 166, F1259-F1268.	1.3	72
57	Optimization of anodic porous transport electrodes for proton exchange membrane water electrolyzers. Journal of Materials Chemistry A, 2019, 7, 26984-26995.	5.2	51
58	Doped, Defectâ€Enriched Carbon Nanotubes as an Efficient Oxygen Reduction Catalyst for Anion Exchange Membrane Fuel Cells. Advanced Materials Interfaces, 2018, 5, 1800184.	1.9	37
59	Multiscale Tomography-Based Analysis of Polymer Electrolyte Fuel Cells: Towards a Fully Resolved Gas Diffusion Electrode Reconstruction. Journal of Electrochemical Energy Conversion and Storage, 2018, 15, .	1.1	5
60	Tailoring the Membraneâ€Electrode Interface in PEM Fuel Cells: A Review and Perspective on Novel Engineering Approaches. Advanced Energy Materials, 2018, 8, 1701257.	10.2	105
61	A Steady-State Monte Carlo Study on the Effect of Structural and Operating Parameters on Liquid Water Distribution within the Microporous Layers and the Catalyst Layers of PEM Fuel Cells. Journal of the Electrochemical Society, 2018, 165, F1092-F1097.	1.3	3
62	Membrane Interlayer with Pt Recombination Particles for Reduction of the Anodic Hydrogen Content in PEM Water Electrolysis. Journal of the Electrochemical Society, 2018, 165, F1271-F1277.	1.3	51
63	Three-dimensional microstructure analysis of a polymer electrolyte membrane water electrolyzer anode. Journal of Power Sources, 2018, 393, 62-66.	4.0	38
64	[Mo 3 S 13] 2â^' Cluster Decorated Sulfurâ€doped Reduced Graphene Oxide as Noble Metalâ€Free Catalyst for Hydrogen Evolution Reaction in Polymer Electrolyte Membrane Electrolyzers. ChemElectroChem, 2018, 5, 2672-2680.	1.7	15
65	Sulfur doped reduced graphene oxide as metal-free catalyst for the oxygen reduction reaction in anion and proton exchange fuel cells. Electrochemistry Communications, 2017, 77, 71-75.	2.3	78
66	Tridoped Reduced Graphene Oxide as a Metalâ€Free Catalyst for Oxygen Reduction Reaction Demonstrated in Acidic and Alkaline Polymer Electrolyte Fuel Cells. Advanced Sustainable Systems, 2017, 1, 1600038.	2.7	50
67	Cerium Oxide Decorated Polymer Nanofibers as Effective Membrane Reinforcement for Durable, Highâ€Performance Fuel Cells. Advanced Energy Materials, 2017, 7, 1602100.	10.2	56
68	High surface hierarchical carbon nanowalls synthesized by plasma deposition using an aromatic precursor. Carbon, 2017, 118, 578-587.	5.4	18
69	A fully spray-coated fuel cell membrane electrode assembly using Aquivion ionomer with a graphene oxide/cerium oxide interlayer. Journal of Power Sources, 2017, 351, 145-150.	4.0	51
70	Fuel Cells: Cerium Oxide Decorated Polymer Nanofibers as Effective Membrane Reinforcement for Durable, Highâ€Performance Fuel Cells (Adv. Energy Mater. 6/2017). Advanced Energy Materials, 2017, 7, .	10.2	0
71	Study of the Mechanisms of Internal Short Circuit in a Li/Li Cell by Synchrotron X-ray Phase Contrast Tomography. ACS Energy Letters, 2017, 2, 94-104.	8.8	89
72	Comprehensive investigation of novel pore-graded gas diffusion layers for high-performance and cost-effective proton exchange membrane electrolyzers. Energy and Environmental Science, 2017, 10, 2521-2533.	15.6	147

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73	Hydrogen concentrator demonstrator module with 19.8% solar-to-hydrogen conversion efficiency according to the higher heating value. International Journal of Hydrogen Energy, 2017, 42, 26804-26815.	3.8	31
74	(Invited) Direct Membrane Deposition â€“ A Fast and Simple Technique for Membrane Electrode Assembly Manufacturing. ECS Transactions, 2017, 80, 571-576.	0.3	5
75	A Novel Fabrication Technique for Electrodes of PEM Water Electrolyzers. ECS Transactions, 2017, 80, 1069-1075.	0.3	10
76	Electrospun sulfonated poly(ether ketone) nanofibers as proton conductive reinforcement for durable Nafion composite membranes. Journal of Power Sources, 2017, 361, 237-242.	4.0	41
77	Simple fabrication of 12ÂÎ¼m thin nanocomposite fuel cell membranes by direct electrospinning and printing. Journal of Power Sources, 2017, 337, 137-144.	4.0	53
78	The reasons for the high power density of fuel cells fabricated with directly deposited membranes. Journal of Power Sources, 2016, 326, 170-175.	4.0	55
79	Synchrotron Xâ€ray Tomographic Study of a Silicon Electrode Before and After Discharge and the Effect of Cavities on Particle Fracturing. ChemElectroChem, 2016, 3, 1170-1177.	1.7	20
80	A completely spray-coated membrane electrode assembly. Electrochemistry Communications, 2016, 70, 65-68.	2.3	39
81	Three-Dimensional Analysis of the Porosity in MgB₂Wires Using FIB Nanotomography. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-5.	1.1	4
82	Morphological Evolution of Electrochemically Plated/Stripped Lithium Microstructures Investigated by Synchrotron X-ray Phase Contrast Tomography. ACS Nano, 2016, 10, 7990-7997.	7.3	108
83	A Review on Metalâ€Free Doped Carbon Materials Used as Oxygen Reduction Catalysts in Solid Electrolyte Proton Exchange Fuel Cells. Fuel Cells, 2016, 16, 522-529.	1.5	42
84	Three-dimensional morphology of the interface between micro porous layer and catalyst layer in a polymer electrolyte membrane fuel cell. RSC Advances, 2016, 6, 80700-80705.	1.7	22
85	Multi-Scale Correlative Tomography of a Li-Ion Battery Composite Cathode. Scientific Reports, 2016, 6, 30109.	1.6	47
86	Influence of carbon substrate on the electrochemical performance of carbon/manganese oxide hybrids in aqueous and organic electrolytes. RSC Advances, 2016, 6, 107163-107179.	1.7	14
87	Water management in novel direct membrane deposition fuel cells under low humidification. International Journal of Hydrogen Energy, 2016, 41, 11412-11417.	3.8	19
88	Directly deposited Nafion/TiO₂ composite membranes for high power medium temperature fuel cells. RSC Advances, 2016, 6, 24261-24266.	1.7	39
89	Degradation of Li/S Battery Electrodes On 3D Current Collectors Studied Using X-ray Phase Contrast Tomography. Scientific Reports, 2015, 5, 10921.	1.6	68
90	Quantification of artifacts in scanning electron microscopy tomography: Improving the reliability of calculated transport parameters in energy applications such as fuel cell and battery electrodes. Journal of Power Sources, 2015, 275, 852-859.	4.0	24

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91	Enhancing the quality of the tomography of nanoporous materials for better understanding of polymer electrolyte fuel cell materials. Journal of Power Sources, 2015, 285, 413-417.	4.0	42
92	Direct deposition of proton exchange membranes enabling high performance hydrogen fuel cells. Journal of Materials Chemistry A, 2015, 3, 11239-11245.	5.2	128
93	Improved Pt-utilization efficiency of low Pt-loading PEM fuel cell electrodes using direct membrane deposition. Electrochemistry Communications, 2015, 60, 168-171.	2.3	54
94	Tomographic Analysis of Polymer Electrolyte Fuel Cell Catalyst Layers: Methods, Validity and Challenges. ECS Transactions, 2015, 69, 409-418.	0.3	4
95	Morphology of nanoporous carbon-binder domains in Li-ion batteriesâ€"A FIB-SEM study. Electrochemistry Communications, 2015, 60, 176-179.	2.3	52
96	Threeâ€Phase Multiscale Modeling of a LiCoO₂ Cathode: Combining the Advantages of FIBâ€"SEM Imaging and Xâ€Ray Tomography. Advanced Energy Materials, 2015, 5, 1401612.	10.2	127
97	Electrodes: A Combination of X-Ray Tomography and Carbon Binder Modeling: Reconstructing the Three Phases of LiCoO2 Li-Ion Battery Cathodes (Adv. Energy Mater. 8/2014). Advanced Energy Materials, 2014, 4, .	10.2	2
98	A Combination of Xâ€Ray Tomography and Carbon Binder Modeling: Reconstructing the Three Phases of LiCoO₂ Liâ€Ion Battery Cathodes. Advanced Energy Materials, 2014, 4, 1301617.	10.2	95
99	Three-dimensional electrochemical Li-ion battery modelling featuring a focused ion-beam/scanning electron microscopy based three-phase reconstruction of a LiCoO2 cathode. Electrochimica Acta, 2014, 115, 131-139.	2.6	96
100	On the importance of FIB-SEM specific segmentation algorithms for porous media. Materials Characterization, 2014, 95, 36-43.	1.9	42
101	Tomography based screening of flow field / current collector combinations for PEM water electrolysis. RSC Advances, 2014, 4, 58888-58894.	1.7	32
102	Multiscale tomography of nanoporous carbon-supported noble metal catalyst layers. Journal of Power Sources, 2013, 228, 185-192.	4.0	70
103	FIB/SEM-based calculation of tortuosity in a porous LiCoO2 cathode for a Li-ion battery. Electrochemistry Communications, 2013, 27, 77-80.	2.3	74
104	Modelling the water distribution within a hydrophilic and hydrophobic 3D reconstructed cathode catalyst layer of a proton exchange membrane fuel cell. Journal of Power Sources, 2013, 227, 260-266.	4.0	41
105	How Coarsening the 3D Reconstruction of a Porous Material Influences Diffusivity and Conductivity Values. ECS Electrochemistry Letters, 2012, 2, F14-F17.	1.9	15
106	Three-Dimensional Reconstruction of a LiCoO2 Li-Ion Battery Cathode. Electrochemical and Solid-State Letters, 2012, 15, A33.	2.2	85
107	Direct three-dimensional reconstruction of a nanoporous catalyst layer for a polymer electrolyte fuel cell. Journal of Power Sources, 2011, 196, 2094-2097.	4.0	90
108	Nano-morphology of a polymer electrolyte fuel cell catalyst layerâ€"imaging, reconstruction and analysis. Nano Research, 2011, 4, 849-860.	5.8	90

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109	On the Correlation between the Oxygen in Hydrogen Content and the Catalytic Activity of Cathode Catalysts in PEM Water Electrolysis. Journal of the Electrochemical Society, 0, , .	1.3	2
110	Energetics of Technical Integration of 2â€Propanol Fuel Cells: Thermodynamic and Current and Future Technical Feasibility. Energy Technology, 0, , 2200343.	1.8	2