

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	Anion-Exchange Membrane Water Electrolyzers. <i>Chemical Reviews</i> , 2022, 122, 11830-11895.	23.0	177
2	Comprehensive investigation of novel pore-graded gas diffusion layers for high-performance and cost-effective proton exchange membrane electrolyzers. <i>Energy and Environmental Science</i> , 2017, 10, 2521-2533.	15.6	147
3	Direct deposition of proton exchange membranes enabling high performance hydrogen fuel cells. <i>Journal of Materials Chemistry A</i> , 2015, 3, 11239-11245.	5.2	128
4	Three-Phase Multiscale Modeling of a LiCoO_2 Cathode: Combining the Advantages of FIB-SEM Imaging and X-Ray Tomography. <i>Advanced Energy Materials</i> , 2015, 5, 1401612.	10.2	127
5	Morphological Evolution of Electrochemically Plated/Stripped Lithium Microstructures Investigated by Synchrotron X-ray Phase Contrast Tomography. <i>ACS Nano</i> , 2016, 10, 7990-7997.	7.3	108
6	Tailoring the Membrane-Electrode Interface in PEM Fuel Cells: A Review and Perspective on Novel Engineering Approaches. <i>Advanced Energy Materials</i> , 2018, 8, 1701257.	10.2	105
7	On the limitations in assessing stability of oxygen evolution catalysts using aqueous model electrochemical cells. <i>Nature Communications</i> , 2021, 12, 2231.	5.8	100
8	IrO_2 coated TiO_2 core-shell microparticles advance performance of low loading proton exchange membrane water electrolyzers. <i>Applied Catalysis B: Environmental</i> , 2020, 269, 118762.	10.8	98
9	Three-dimensional electrochemical Li-ion battery modelling featuring a focused ion-beam/scanning electron microscopy based three-phase reconstruction of a LiCoO_2 cathode. <i>Electrochimica Acta</i> , 2014, 115, 131-139.	2.6	96
10	A Combination of X-Ray Tomography and Carbon Binder Modeling: Reconstructing the Three Phases of LiCoO_2 Li-ion Battery Cathodes. <i>Advanced Energy Materials</i> , 2014, 4, 1301617.	10.2	95
11	Essentials of High Performance Water Electrolyzers – From Catalyst Layer Materials to Electrode Engineering. <i>Advanced Energy Materials</i> , 2021, 11, 2101998.	10.2	92
12	Bipolar Membrane Electrode Assemblies for Water Electrolysis. <i>ACS Applied Energy Materials</i> , 2020, 3, 9635-9644.	2.5	91
13	Direct three-dimensional reconstruction of a nanoporous catalyst layer for a polymer electrolyte fuel cell. <i>Journal of Power Sources</i> , 2011, 196, 2094-2097.	4.0	90
14	Nano-morphology of a polymer electrolyte fuel cell catalyst layer – imaging, reconstruction and analysis. <i>Nano Research</i> , 2011, 4, 849-860.	5.8	90
15	Study of the Mechanisms of Internal Short Circuit in a Li/Li Cell by Synchrotron X-ray Phase Contrast Tomography. <i>ACS Energy Letters</i> , 2017, 2, 94-104.	8.8	89
16	Three-Dimensional Reconstruction of a LiCoO_2 Li-Ion Battery Cathode. <i>Electrochemical and Solid-State Letters</i> , 2012, 15, A33.	2.2	85
17	Sulfur doped reduced graphene oxide as metal-free catalyst for the oxygen reduction reaction in anion and proton exchange fuel cells. <i>Electrochemistry Communications</i> , 2017, 77, 71-75.	2.3	78
18	FIB/SEM-based calculation of tortuosity in a porous LiCoO_2 cathode for a Li-ion battery. <i>Electrochemistry Communications</i> , 2013, 27, 77-80.	2.3	74

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19	Evaluating Electrocatalysts at Relevant Currents in a Half-Cell: The Impact of Pt Loading on Oxygen Reduction Reaction. <i>Journal of the Electrochemical Society</i> , 2019, 166, F1259-F1268.	1.3	72
20	Multiscale tomography of nanoporous carbon-supported noble metal catalyst layers. <i>Journal of Power Sources</i> , 2013, 228, 185-192.	4.0	70
21	Degradation of Li/S Battery Electrodes On 3D Current Collectors Studied Using X-ray Phase Contrast Tomography. <i>Scientific Reports</i> , 2015, 5, 10921.	1.6	68
22	Platinum Dissolution in Realistic Fuel Cell Catalyst Layers. <i>Angewandte Chemie - International Edition</i> , 2021, 60, 8882-8888.	7.2	63
23	Oxygen Reduction Reaction in Alkaline Media Causes Iron Leaching from Fe-N-C Electrocatalysts. <i>Journal of the American Chemical Society</i> , 2022, 144, 9753-9763.	6.6	59
24	Cerium Oxide Decorated Polymer Nanofibers as Effective Membrane Reinforcement for Durable, High-Performance Fuel Cells. <i>Advanced Energy Materials</i> , 2017, 7, 1602100.	10.2	56
25	The reasons for the high power density of fuel cells fabricated with directly deposited membranes. <i>Journal of Power Sources</i> , 2016, 326, 170-175.	4.0	55
26	Improved Pt-utilization efficiency of low Pt-loading PEM fuel cell electrodes using direct membrane deposition. <i>Electrochemistry Communications</i> , 2015, 60, 168-171.	2.3	54
27	Simple fabrication of 12-µm thin nanocomposite fuel cell membranes by direct electrospinning and printing. <i>Journal of Power Sources</i> , 2017, 337, 137-144.	4.0	53
28	Morphology of nanoporous carbon-binder domains in Li-ion batteries—A FIB-SEM study. <i>Electrochemistry Communications</i> , 2015, 60, 176-179.	2.3	52
29	A fully spray-coated fuel cell membrane electrode assembly using Aquivion ionomer with a graphene oxide/cerium oxide interlayer. <i>Journal of Power Sources</i> , 2017, 351, 145-150.	4.0	51
30	Membrane Interlayer with Pt Recombination Particles for Reduction of the Anodic Hydrogen Content in PEM Water Electrolysis. <i>Journal of the Electrochemical Society</i> , 2018, 165, F1271-F1277.	1.3	51
31	From Catalyst Coated Membranes to Porous Transport Electrode Based Configurations in PEM Water Electrolyzers. <i>Journal of the Electrochemical Society</i> , 2019, 166, F1070-F1078.	1.3	51
32	Optimization of anodic porous transport electrodes for proton exchange membrane water electrolyzers. <i>Journal of Materials Chemistry A</i> , 2019, 7, 26984-26995.	5.2	51
33	Tridoped Reduced Graphene Oxide as a Metal-Free Catalyst for Oxygen Reduction Reaction Demonstrated in Acidic and Alkaline Polymer Electrolyte Fuel Cells. <i>Advanced Sustainable Systems</i> , 2017, 1, 1600038.	2.7	50
34	Fabrication of a Robust PEM Water Electrolyzer Based on Non-Noble Metal Cathode Catalyst: [Mo ₃ S ₁₃] ²⁺ Clusters Anchored to N-Doped Carbon Nanotubes. <i>Small</i> , 2020, 16, e2003161.	5.2	50
35	Multi-Scale Correlative Tomography of a Li-Ion Battery Composite Cathode. <i>Scientific Reports</i> , 2016, 6, 30109.	1.6	47
36	Critical Advances in Ambient Air Operation of Nonaqueous Rechargeable Li-Air Batteries. <i>Small</i> , 2021, 17, e1903854.	5.2	45

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37	Evaluations of Concepts for the Integration of Fuel Cells in Liquid Organic Hydrogen Carrier Systems. <i>Energy & Fuels</i> , 2019, 33, 10324-10330.	2.5	43
38	On the importance of FIB-SEM specific segmentation algorithms for porous media. <i>Materials Characterization</i> , 2014, 95, 36-43.	1.9	42
39	Enhancing the quality of the tomography of nanoporous materials for better understanding of polymer electrolyte fuel cell materials. <i>Journal of Power Sources</i> , 2015, 285, 413-417.	4.0	42
40	A Review on Metal-Free Doped Carbon Materials Used as Oxygen Reduction Catalysts in Solid Electrolyte Proton Exchange Fuel Cells. <i>Fuel Cells</i> , 2016, 16, 522-529.	1.5	42
41	Modelling the water distribution within a hydrophilic and hydrophobic 3D reconstructed cathode catalyst layer of a proton exchange membrane fuel cell. <i>Journal of Power Sources</i> , 2013, 227, 260-266.	4.0	41
42	Electrospun sulfonated poly(ether ketone) nanofibers as proton conductive reinforcement for durable Nafion composite membranes. <i>Journal of Power Sources</i> , 2017, 361, 237-242.	4.0	41
43	Directly coated membrane electrode assemblies for proton exchange membrane water electrolysis. <i>Electrochemistry Communications</i> , 2020, 110, 106640.	2.3	40
44	A completely spray-coated membrane electrode assembly. <i>Electrochemistry Communications</i> , 2016, 70, 65-68.	2.3	39
45	Directly deposited Nafion/TiO ₂ composite membranes for high power medium temperature fuel cells. <i>RSC Advances</i> , 2016, 6, 24261-24266.	1.7	39
46	Three-dimensional microstructure analysis of a polymer electrolyte membrane water electrolyzer anode. <i>Journal of Power Sources</i> , 2018, 393, 62-66.	4.0	38
47	Improved Hydrogen Oxidation Reaction Activity and Stability of Buried Metal-Oxide Electrocatalyst Interfaces. <i>Chemistry of Materials</i> , 2020, 32, 7716-7724.	3.2	38
48	Understanding the activity transport nexus in water and CO ₂ electrolysis: State of the art, challenges and perspectives. <i>Chemical Engineering Journal</i> , 2021, 424, 130501.	6.6	38
49	Doped, Defect-Enriched Carbon Nanotubes as an Efficient Oxygen Reduction Catalyst for Anion Exchange Membrane Fuel Cells. <i>Advanced Materials Interfaces</i> , 2018, 5, 1800184.	1.9	37
50	Fuel cell catalyst layer evaluation using a gas diffusion electrode half-cell: Oxygen reduction reaction on Fe-N-C in alkaline media. <i>Electrochemistry Communications</i> , 2020, 116, 106761.	2.3	34
51	Tomography based screening of flow field / current collector combinations for PEM water electrolysis. <i>RSC Advances</i> , 2014, 4, 58888-58894.	1.7	32
52	Hydrogen concentrator demonstrator module with 19.8% solar-to-hydrogen conversion efficiency according to the higher heating value. <i>International Journal of Hydrogen Energy</i> , 2017, 42, 26804-26815.	3.8	31
53	Photocorrosion of WO ₃ Photoanodes in Different Electrolytes. <i>ACS Physical Chemistry Au</i> , 2021, 1, 6-13.	1.9	30
54	High performance direct organic fuel cell using the acetone/isopropanol liquid organic hydrogen carrier system. <i>Electrochemistry Communications</i> , 2020, 118, 106786.	2.3	29

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55	Electrochemical- and mechanical stability of catalyst layers in anion exchange membrane water electrolysis. <i>International Journal of Hydrogen Energy</i> , 2022, 47, 4304-4314.	3.8	28
56	On the effect of anion exchange ionomer binders in bipolar electrode membrane interface water electrolysis. <i>Journal of Materials Chemistry A</i> , 2021, 9, 14285-14295.	5.2	27
57	Performance of Quaternized Polybenzimidazole-Cross-Linked Poly(vinylbenzyl chloride) Membranes in HT-PEMFCs. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 56584-56596.	4.0	25
58	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. <i>Journal of Power Sources</i> , 2015, 275, 852-859.	4.0	24
59	30-µm thin hexamethyl-p-terphenyl poly(benzimidazolium) anion exchange membrane for vanadium redox flow batteries. <i>Electrochemistry Communications</i> , 2019, 102, 37-40.	2.3	24
60	Three-dimensional morphology of the interface between micro porous layer and catalyst layer in a polymer electrolyte membrane fuel cell. <i>RSC Advances</i> , 2016, 6, 80700-80705.	1.7	22
61	Impact of Carbon Support Corrosion on Performance Losses in Polymer Electrolyte Membrane Fuel Cells. <i>Journal of the Electrochemical Society</i> , 2019, 166, F956-F962.	1.3	22
62	Synchrotron X-ray Tomographic Study of a Silicon Electrode Before and After Discharge and the Effect of Cavities on Particle Fracturing. <i>ChemElectroChem</i> , 2016, 3, 1170-1177.	1.7	20
63	Water management in novel direct membrane deposition fuel cells under low humidification. <i>International Journal of Hydrogen Energy</i> , 2016, 41, 11412-11417.	3.8	19
64	Amorphous Carbon Coatings for Total Knee Replacements—Part I: Deposition, Cytocompatibility, Chemical and Mechanical Properties. <i>Polymers</i> , 2021, 13, 1952.	2.0	19
65	The 2-Propanol Fuel Cell: A Review from the Perspective of a Hydrogen Energy Economy. <i>Energy Technology</i> , 2021, 9, 2100164.	1.8	19
66	High surface hierarchical carbon nanowalls synthesized by plasma deposition using an aromatic precursor. <i>Carbon</i> , 2017, 118, 578-587.	5.4	18
67	FIB/SEM tomography segmentation by optical flow estimation. <i>Ultramicroscopy</i> , 2020, 219, 113090.	0.8	16
68	Tomographic Reconstruction and Analysis of a Silver CO ₂ Reduction Cathode. <i>Advanced Energy Materials</i> , 2020, 10, 2000488.	10.2	16
69	Amorphous Carbon Coatings for Total Knee Replacements—Part II: Tribological Behavior. <i>Polymers</i> , 2021, 13, 1880.	2.0	16
70	How Coarsening the 3D Reconstruction of a Porous Material Influences Diffusivity and Conductivity Values. <i>ECS Electrochemistry Letters</i> , 2012, 2, F14-F17.	1.9	15
71	[Mo ₃ S ₁₃] Cluster Decorated Sulfur-doped Reduced Graphene Oxide as Noble Metal-free Catalyst for Hydrogen Evolution Reaction in Polymer Electrolyte Membrane Electrolyzers. <i>ChemElectroChem</i> , 2018, 5, 2672-2680.	1.7	15
72	Spatially Resolved Quantification of Ionomer Degradation in Fuel Cells by Confocal Raman Microscopy. <i>Journal of the Electrochemical Society</i> , 2019, 166, F3044-F3051.	1.3	15

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73	Stabilization of Li ^S batteries with a lean electrolyte <i>via</i> ion-exchange trapping of lithium polysulfides using a cationic, polybenzimidazolium binder. Sustainable Energy and Fuels, 2020, 4, 1180-1190.	2.5	15
74	Bipolar-interface fuel cells – an underestimated membrane electrode assembly concept for PGM-free ORR catalysts. Sustainable Energy and Fuels, 2020, 4, 2508-2518.	2.5	15
75	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
76	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
77	Platinum Dissolution in Realistic Fuel Cell Catalyst Layers. Angewandte Chemie, 2021, 133, 8964-8970.	1.6	13
78	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
79	Local hydration in ionomer composite membranes determined with confocal Raman microscopy. Journal of Membrane Science, 2019, 585, 126-135.	4.1	11
80	A Novel Fabrication Technique for Electrodes of PEM Water Electrolyzers. ECS Transactions, 2017, 80, 1069-1075.	0.3	10
81	An Artificial SEI Layer Based on an Inorganic Coordination Polymer with Self-Healing Ability for Long-Lived Rechargeable Lithium-Metal Batteries. Batteries and Supercaps, 2022, 5, .	2.4	8
82	Spatially and temporally resolved monitoring of doping polybenzimidazole membranes with phosphoric acid. Journal of Membrane Science, 2021, 625, 119145.	4.1	7
83	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
84	Bipolar-Interface Hydrogen Fuel Cells: A Review and Perspective on Future High-Performance, Low Platinum-Group Metal Content Designs. ChemElectroChem, 2021, 8, 1430-1447.	1.7	6
85	Communication – 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
86	(Invited) Direct Membrane Deposition – A Fast and Simple Technique for Membrane Electrode Assembly Manufacturing. ECS Transactions, 2017, 80, 571-576.	0.3	5
87	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
88	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
89	Tomographic Analysis of Polymer Electrolyte Fuel Cell Catalyst Layers: Methods, Validity and Challenges. ECS Transactions, 2015, 69, 409-418.	0.3	4
90	Three-Dimensional Analysis of the Porosity in MgB ₂ Wires Using FIB Nanotomography. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-5.	1.1	4

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91	The influence of the anion exchange membrane on mass-transport limiting phenomena in bipolar interface fuel cells with Fe-N/C based cathode catalyst layers. RSC Advances, 2021, 11, 31477-31486.	1.7	4
92	Activation of electrospun carbon fibers: the effect of fiber diameter on CO ₂ and steam reaction kinetics. Journal of Polymer Research, 2021, 28, 1.	1.2	4
93	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
94	Active solution heating and cooling in electrospinning enabling spinnability from various solvents. Journal of Applied Polymer Science, 2022, 139, .	1.3	3
95	Electrodes: A Combination of X-Ray Tomography and Carbon Binder Modeling: Reconstructing the Three Phases of LiCoO ₂ Li-Ion Battery Cathodes (Adv. Energy Mater. 8/2014). Advanced Energy Materials, 2014, 4, .	10.2	2
96	H ⁺ -Conducting Aromatic Multiblock Copolymer and Blend Membranes and Their Application in PEM Electrolysis. Polymers, 2021, 13, 3467.	2.0	2
97	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
98	Energetics of Technical Integration of Propanol Fuel Cells: Thermodynamic and Current and Future Technical Feasibility. Energy Technology, 0, , 2200343.	1.8	2
99	Catalyst Dissolution Analysis in PEM Water Electrolyzers during Intermittent Operation. ECS Meeting Abstracts, 2022, MA2022-01, 1369-1369.	0.0	1
100	Fuel Cells: Cerium Oxide Decorated Polymer Nanofibers as Effective Membrane Reinforcement for Durable, High-Performance Fuel Cells (Adv. Energy Mater. 6/2017). Advanced Energy Materials, 2017, 7, .	10.2	0
101	Bipolar Membrane Electrode Assemblies for Water Electrolysis – Goals and Challenges. ECS Meeting Abstracts, 2021, MA2021-01, 1230-1230.	0.0	0
102	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
103	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
104	Ideal Positioning of a Pt-Interlayer for H ₂ -O ₂ -Recombination in Polymer Electrolyte Membrane Water Electrolysis. ECS Meeting Abstracts, 2021, MA2021-02, 1250-1250.	0.0	0
105	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
106	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
107	Novel Sulfonated and Phosphonated Ionomers and Ionomer (blend) Membranes for Electrochemical Applications. ECS Meeting Abstracts, 2022, MA2022-01, 1413-1413.	0.0	0
108	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

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109	Catalyst Development for the Electrochemical Oxidation of Isopropanol in LOHC Fuel Cells. ECS Meeting Abstracts, 2022, MA2022-01, 1705-1705.	0.0	0
110	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