Huayang Zhu

List of Publications by Year
in descending order

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		101543	114465
66	4,848	36	63
papers	citations	h-index	g-index

69	69	69	3578
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Faradaic efficiency in protonic-ceramic electrolysis cells. JPhys Energy, 2022, 4, 014002.	5.3	12
2	Modeling ammonia-fueled co-flow dual-channel protonic-ceramic fuel cells. International Journal of Green Energy, 2022, 19, 1568-1582.	3.8	1
3	Perspectives on Technical Challenges and Scaling Considerations for Tubular Protonic-Ceramic Electrolysis Cells and Stacks. Journal of the Electrochemical Society, 2022, 169, 054525.	2.9	2
4	Modeling Electro-Chemo-Mechanical Behaviors within the Dense BaZr0.8Y0.2O3â˜Î´ Protonic-Ceramic Membrane in a Long Tubular Electrochemical Cell. Membranes, 2021, 11, 378.	3.0	4
5	Self-contained Electrochemical Process to Produce Pure Compressed Hydrogen from Hydrocarbons and Steam Without an External Energy Supply. Journal of the Electrochemical Society, 2020, 167, 104512.	2.9	0
6	Thermodynamic Insights for Electrochemical Hydrogen Compression with Proton-Conducting Membranes. Membranes, 2019, 9, 77.	3.0	18
7	Chemo-Thermo-Mechanical Coupling in Protonic Ceramic Fuel Cells from Fabrication to Operation. Journal of the Electrochemical Society, 2019, 166, F1007-F1015.	2.9	18
8	Highly efficient reversible protonic ceramic electrochemical cells for power generation and fuel production. Nature Energy, 2019, 4, 230-240.	39.5	419
9	Equilibrium thermodynamic predictions of coking propensity in membrane-based dehydrogenation of hydrocarbons and alcohols. Catalysis Today, 2019, 331, 7-11.	4.4	10
10	A detailed reaction mechanism for oxidative coupling of methane over Mn/Na2WO4/SiO2 catalyst for non-isothermal conditions. Catalysis Today, 2018, 312, 10-22.	4.4	55
11	Boundaryâ€Layer Model to Predict Chemically Reacting Flow within Heated, Highâ€Speed, Microtubular Reactors. International Journal of Chemical Kinetics, 2018, 50, 473-480.	1.6	12
12	Measurement and Characterization of a High-Temperature, Coke-Resistant Bi-functional Ni/BZY15 Water-Gas-Shift Catalyst Under Steam-Reforming Conditions. Catalysis Letters, 2018, 148, 3592-3607.	2.6	9
13	On the Fundamental and Practical Aspects of Modeling Complex Electrochemical Kinetics and Transport. Journal of the Electrochemical Society, 2018, 165, E637-E658.	2.9	20
14	Defect Incorporation and Transport within Dense BaZr_{0.8}Y_{0.2}O_{3 â˜Î´}(BZY20) Proton-Conducting Membranes. Journal of the Electrochemical Society, 2018, 165, F581-F588.	2.9	69
15	Highly durable, coking and sulfur tolerant, fuel-flexible protonic ceramic fuel cells. Nature, 2018, 557, 217-222.	27.8	500
16	Thermodynamic Analysis of Energy Efficiency and Fuel Utilization in Protonic-Ceramic Fuel Cells with Planar Co-Flow Configurations. Journal of the Electrochemical Society, 2018, 165, F942-F950.	2.9	9
17	Process intensification in the catalytic conversion of natural gas to fuels and chemicals. Proceedings of the Combustion Institute, 2017, 36, 51-76.	3.9	47
18	The Influence of Hydrogen-Permeable Membranes and Pressure on Methane Dehydroaromatization in Packed-Bed Catalytic Reactors. Industrial & Engineering Chemistry Research, 2017, 56, 3551-3559.	3.7	15

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19	Modeling Protonic-Ceramic Fuel Cells with Porous Composite Electrodes in a Button-Cell Configuration. Journal of the Electrochemical Society, 2017, 164, F1400-F1411.	2.9	29
20	Detailed Reaction Mechanisms for the Oxidative Coupling of Methane over La₂O₃/CeO₂ Nanofiber Fabric Catalysts. ChemCatChem, 2017, 9, 4538-4551.	3.7	46
21	Catalytic Chemistry for Methane Dehydroaromatization (MDA) on a Bifunctional Mo/HZSM-5 Catalyst in a Packed Bed. Industrial & Engineering Chemistry Research, 2016, 55, 9895-9906.	3.7	45
22	Probing Grain-Boundary Chemistry and Electronic Structure in Proton-Conducting Oxides by Atom Probe Tomography. Nano Letters, 2016, 16, 6924-6930.	9.1	36
23	Three-dimensional quantification of composition and electrostatic potential at individual grain boundaries in doped ceria. Journal of Materials Chemistry A, 2016, 4, 5167-5175.	10.3	39
24	Membrane polarization in mixed-conducting ceramic fuel cells and electrolyzers. International Journal of Hydrogen Energy, 2016, 41, 2931-2943.	7.1	57
25	Pore-Scale Phenomena and Challenges in Energy Research and Technology. World Scientific Series in Nanoscience and Nanotechnology, 2015, , 305-338.	0.1	0
26	Interpreting equilibrium-conductivity and conductivity-relaxation measurements to establish thermodynamic and transport properties for multiple charged defect conducting ceramics. Faraday Discussions, 2015, 182, 49-74.	3.2	49
27	A Computational Model of the Mechanical Behavior within Reconstructed LixCoO2 Li-ion Battery Cathode Particles. Electrochimica Acta, 2014, 130, 707-717.	5.2	71
28	Interpretation of Defect and Gas-Phase Fluxes through Mixed-Conducting Ceramics Using Nernstâ€“Planckâ€“Poisson and Integral Formulations. Journal of the Electrochemical Society, 2014, 161, F114-F124.	2.9	41
29	Effects of three-dimensional cathode microstructure on the performance of lithium-ion battery cathodes. Electrochimica Acta, 2013, 88, 580-588.	5.2	144
30	Modeling the Steady-State and Transient Response of Polarized and Non-Polarized Proton-Conducting Doped-Perovskite Membranes. Journal of the Electrochemical Society, 2013, 160, F290-F300.	2.9	60
31	Vaporisation characteristics of methanol, ethanol and heptane droplets in opposed stagnation flow at low temperature and pressure. Combustion Theory and Modelling, 2012, 16, 715-735.	1.9	10
32	A Model-Based Interpretation of the Influence of Anode Surface Chemistry on Solid Oxide Fuel Cell Electrochemical Impedance Spectra. Journal of the Electrochemical Society, 2012, 159, F255-F266.	2.9	28
33	Separated Anode Experiment to Measure Gas Transport and Methane Reforming within Solid-Oxide Fuel Cell Anodes. Materials Research Society Symposia Proceedings, 2012, 1385, 1.	0.1	0
34	Modeling the Steady-State and Dynamic Characteristics of Solid-Oxide Fuel Cells. Advances in Chemical Engineering, 2012, , 331-381.	0.9	10
35	Analysis, Optimization, and Control of Solid-Oxide Fuel Cell Systems. Advances in Chemical Engineering, 2012, , 383-446.	0.9	13
36	A modified dusty gas model in the form of a Fick's model for the prediction of multicomponent mass transport in a solid oxide fuel cell anode. Journal of Power Sources, 2012, 206, 171-178.	7.8	70

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37	The design, fabrication, and evaluation of a ceramic counter-flow microchannel heat exchanger. Applied Thermal Engineering, 2011, 31, 2004-2012.	6.0	91
38	Percolation micro-model to predict the effective properties of the composite electrode with poly-dispersed particle sizes. Journal of Power Sources, 2011, 196, 3178-3185.	7.8	29
39	Two-dimensional model of distributed charge transfer and internal reforming within unit cells of segmented-in-series solid-oxide fuel cells. Journal of Power Sources, 2011, 196, 7654-7664.	7.8	14
40	Polarization Characteristics and Chemistry in Reversible Tubular Solid-Oxide Cells Operating on Mixtures of H[sub 2], CO, H[sub 2]O, and CO[sub 2]. Journal of the Electrochemical Society, 2011, 158, B117.	2.9	42
41	Stability and coking of direct-methane solid oxide fuel cells: Effect of CO2 and air additions. Journal of Power Sources, 2010, 195, 271-279.	7.8	83
42	A particle-based model for predicting the effective conductivities of composite electrodes. Journal of Power Sources, 2010, 195, 6671-6679.	7.8	83
43	Modeling Electrochemical Oxidation of Hydrogen on Niâ€“YSZ Pattern Anodes. Journal of the Electrochemical Society, 2009, 156, B1004.	2.9	123
44	Physically Based Model-Predictive Control for SOFC Stacks and Systems. ECS Transactions, 2009, 25, 1175-1184.	0.5	3
45	Multidimensional flow, thermal, and chemical behavior in solid-oxide fuel cell button cells. Journal of Power Sources, 2009, 187, 123-135.	7.8	54
46	Percolation theory to predict effective properties of solid oxide fuel-cell composite electrodes. Journal of Power Sources, 2009, 191, 240-252.	7.8	176
47	Fabrication and evaluation of solid-oxide fuel cell anodes employing reaction-sintered yttria-stabilized zirconia. Journal of Power Sources, 2009, 193, 706-712.	7.8	16
48	Modeling electrochemical partial oxidation of methane for cogeneration of electricity and syngas in solid-oxide fuel cells. Journal of Power Sources, 2008, 183, 143-150.	7.8	29
49	Importance of Anode Microstructure in Modeling Solid Oxide Fuel Cells. Journal of the Electrochemical Society, 2008, 155, B538.	2.9	43
50	Solid Oxide Fuel Cells: Operating Principles, Current Challenges, and the Role of Syngas. Combustion Science and Technology, 2008, 180, 1207-1244.	2.3	99
51	Solid Oxide Fuel Cell with Oxide Anode-Side Support. Electrochemical and Solid-State Letters, 2008, 11, B174.	2.2	25
52	Modeling Distributed Charge-Transfer Processes in SOFC Membrane Electrode Assemblies. Journal of the Electrochemical Society, 2008, 155, B715.	2.9	145
53	Modeling Distributed Charge-Transfer Processes in Membrane Electrode Assemblies with Mixed-Conducting Composite Electrodes. ECS Transactions, 2007, 7, 1869-1878.	0.5	6
54	Methanation of carbon dioxide by hydrogen reduction using the Sabatier process in microchannel reactors. Chemical Engineering Science, 2007, 62, 1161-1170.	3.8	249

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55	The influence of current collection on the performance of tubular anode-supported SOFC cells. Journal of Power Sources, 2007, 169, 315-326.	7.8	69
56	Catalytic partial oxidation of methane using RhSr- and Ni-substituted hexaaluminates. Proceedings of the Combustion Institute, 2007, 31, 1965-1972.	3.9	30
57	Gas-phase reactions of methane and natural-gas with air and steam in non-catalytic regions of a solid-oxide fuel cell. Journal of Power Sources, 2006, 156, 434-447.	7.8	50
58	Anode barrier layers for tubular solid-oxide fuel cells with methane fuel streams. Journal of Power Sources, 2006, 161, 413-419.	7.8	58
59	Performance predictions of a tubular SOFC operating on a partially reformed JP-8 surrogate. Journal of Power Sources, 2006, 162, 553-562.	7.8	19
60	Thermodynamics of SOFC efficiency and fuel utilization as functions of fuel mixtures and operating conditions. Journal of Power Sources, 2006, 161, 957-964.	7.8	67
61	Modeling Electrochemical Impedance Spectra in SOFC Button Cells with Internal Methane Reforming. Journal of the Electrochemical Society, 2006, 153, A1765.	2.9	75
62	Methane reforming kinetics within a Niâ€“YSZ SOFC anode support. Applied Catalysis A: General, 2005, 295, 40-51.	4.3	290
63	Solid-oxide fuel cells with hydrocarbon fuels. Proceedings of the Combustion Institute, 2005, 30, 2379-2404.	3.9	131
64	Modeling Elementary Heterogeneous Chemistry and Electrochemistry in Solid-Oxide Fuel Cells. Journal of the Electrochemical Society, 2005, 152, A2427.	2.9	427
65	A general mathematical model for analyzing the performance of fuel-cell membrane-electrode assemblies. Journal of Power Sources, 2003, 117, 61-74.	7.8	278
66	Homogeneous kinetics and equilibrium predictions of coking propensity in the anode channels of direct oxidation solid-oxide fuel cells using dry natural gas. Journal of Power Sources, 2003, 123, 182-189.	7.8	74