Chengxiang X Xiang

List of Publications by Year
in descending order

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43 papers	4,240 citations	136950 32 h-index	243625 44 g-index
45 all docs	45 docs citations	45 times ranked	4287 citing authors

#	Article	IF	Citations
1	An analysis of the optimal band gaps of light absorbers in integrated tandem photoelectrochemical water-splitting systems. Energy and Environmental Science, 2013, 6, 2984.	30.8	497
2	Gas-Diffusion Electrodes for Carbon Dioxide Reduction: A New Paradigm. ACS Energy Letters, 2019, 4, 317-324.	17.4	416
3	Coupling electrochemical CO2 conversion with CO2 capture. Nature Catalysis, 2021, 4, 952-958.	34.4	272
4	Modeling, simulation, and design criteria for photoelectrochemical water-splitting systems. Energy and Environmental Science, 2012, 5, 9922.	30.8	264
5	A monolithically integrated, intrinsically safe, 10% efficient, solar-driven water-splitting system based on active, stable earth-abundant electrocatalysts in conjunction with tandem IIIâ€“V light absorbers protected by amorphous TiO₂ films. Energy and Environmental Science, 2015, 8, 3166-3172.	30.8	263
6	Electrochemical carbon dioxide capture to close the carbon cycle. Energy and Environmental Science, 2021, 14, 781-814.	30.8	207
7	Principles and implementations of electrolysis systems for water splitting. Materials Horizons, 2016, 3, 169-173.	12.2	202
8	Solar-Driven Reduction of 1 atm of CO₂ to Formate at 10% Energy-Conversion Efficiency by Use of a TiO₂-Protected IIIâ€“V Tandem Photoanode in Conjunction with a Bipolar Membrane and a Pd/C Cathode. ACS Energy Letters, 2016, 1, 764-770.	17.4	173
9	An experimental and modeling/simulation-based evaluation of the efficiency and operational performance characteristics of an integrated, membrane-free, neutral pH solar-driven water-splitting system. Energy and Environmental Science, 2014, 7, 3371-3380.	30.8	152
10	Simulations of the irradiation and temperature dependence of the efficiency of tandem photoelectrochemical water-splitting systems. Energy and Environmental Science, 2013, 6, 3605.	30.8	148
11	Modeling, Simulation, and Implementation of Solarâ€Driven Waterâ€Splitting Devices. Angewandte Chemie - International Edition, 2016, 55, 12974-12988.	13.8	119
12	CO₂ Reduction to CO with 19% Efficiency in a Solar-Driven Gas Diffusion Electrode Flow Cell under Outdoor Solar Illumination. ACS Energy Letters, 2020, 5, 470-476.	17.4	117
13	A Stabilized, Intrinsically Safe, 10% Efficient, Solarâ€Driven Waterâ€Splitting Cell Incorporating Earthâ€Abundant Electrocatalysts with Steadyâ€State pH Gradients and Product Separation Enabled by a Bipolar Membrane. Advanced Energy Materials, 2016, 6, 1600379.	19.5	114
14	Effects of Electrolyte Buffer Capacity on Surface Reactant Species and the Reaction Rate of CO₂ in Electrochemical CO₂ Reduction. Journal of Physical Chemistry C, 2018, 122, 3719-3726.	3.1	92
15	A direct coupled electrochemical system for capture and conversion of CO2 from oceanwater. Nature Communications, 2020, 11, 4412.	12.8	91
16	Modeling, Simulation, and Fabrication of a Fully Integrated, Acidâ€stable, Scalable Solarâ€Driven Waterâ€Splitting System. ChemSusChem, 2015, 8, 544-551.	6.8	89
17	An electrochemical engineering assessment of the operational conditions and constraints for solar-driven water-splitting systems at near-neutral pH. Energy and Environmental Science, 2015, 8, 2760-2767.	30.8	82
18	High-Rate Electrochemical Reduction of Carbon Monoxide to Ethylene Using Cu-Nanoparticle-Based Gas Diffusion Electrodes. ACS Energy Letters, 2018, 3, 855-860.	17.4	77

#	Article	IF	Citations
19	A quantitative analysis of the efficiency of solar-driven water-splitting device designs based on tandem photoabsorbers patterned with islands of metallic electrocatalysts. Energy and Environmental Science, 2015, 8, 1736-1747.	30.8	66
20	Practical challenges in the development of photoelectrochemical solar fuels production. Sustainable Energy and Fuels, 2020, 4, 985-995.	4.9	58
21	Understanding Multi-Ion Transport Mechanisms in Bipolar Membranes. ACS Applied Materials & Interfaces, 2020, 12, 52509-52526.	8.0	54
22	Modeling an integrated photoelectrolysis system sustained by water vapor. Energy and Environmental Science, 2013, 6, 3713.	30.8	52
23	Operational constraints and strategies for systems to effect the sustainable, solar-driven reduction of atmospheric CO₂. Energy and Environmental Science, 2015, 8, 3663-3674.	30.8	52
24	An Experimental- and Simulation-Based Evaluation of the CO₂ Utilization Efficiency of Aqueous-Based Electrochemical CO₂ Reduction Reactors with Ion-Selective Membranes. ACS Applied Energy Materials, 2019, 2, 5843-5850.	5.1	51
25	Combined Catalysis and Optical Screening for High Throughput Discovery of Solar Fuels Catalysts. Journal of the Electrochemical Society, 2013, 160, F337-F342.	2.9	50
26	Hydrogen from Sunlight and Water: A Side-by-Side Comparison between Photoelectrochemical and Solar Thermochemical Water-Splitting. ACS Energy Letters, 2021, 6, 3096-3113.	17.4	45
27	Evaluation and optimization of mass transport of redox species in silicon microwire-array photoelectrodes. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 15622-15627.	7.1	43
28	Correlating Oxidation State and Surface Area to Activity from <i>Operando</i> Studies of Copper CO Electroreduction Catalysts in a Gas-Fed Device. ACS Catalysis, 2020, 10, 8000-8011.	11.2	37
29	Modeling the Performance of an Integrated Photoelectrolysis System with 10 Ã— Solar Concentrators. Journal of the Electrochemical Society, 2014, 161, F1101-F1110.	2.9	36
30	Evaluation of flow schemes for near-neutral pH electrolytes in solar-fuel generators. Sustainable Energy and Fuels, 2017, 1, 458-466.	4.9	36
31	Decoupling H₂(g) and O₂(g) Production in Water Splitting by a Solar-Driven V^{3+/2+}(aq,H₂SO₄)|KOH(aq) Cell. ACS Energy Letters, 2019, 4, 968-976.	17.4	33
32	A sensitivity analysis to assess the relative importance of improvements in electrocatalysts, light absorbers, and system geometry on the efficiency of solar-fuels generators. Energy and Environmental Science, 2015, 8, 876-886.	30.8	32
33	Modeling the Performance of A Flow-Through Gas Diffusion Electrode for Electrochemical Reduction of CO or CO₂. Journal of the Electrochemical Society, 2020, 167, 114503.	2.9	28
34	Comparative Technoeconomic Analysis of Renewable Generation of Methane Using Sunlight, Water, and Carbon Dioxide. ACS Energy Letters, 0, , 1540-1549.	17.4	28
35	<i>Operando</i> Local pH Measurement within Gas Diffusion Electrodes Performing Electrochemical Carbon Dioxide Reduction. Journal of Physical Chemistry C, 2021, 125, 20896-20904.	3.1	25
36	Modeling and Simulation of the Spatial and Light-Intensity Dependence of Product Distributions in an Integrated Photoelectrochemical CO₂ Reduction System. ACS Energy Letters, 2016, 1, 273-280.	17.4	24

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37	3D Printed Nickelâ€“Molybdenum-Based Electrocatalysts for Hydrogen Evolution at Low Overpotentials in a Flow-Through Configuration. ACS Applied Materials & Interfaces, 2021, 13, 20260-20268.	8.0	22
38	Probing the Catalytically Active Region in a Nanoporous Gold Gas Diffusion Electrode for Highly Selective Carbon Dioxide Reduction. ACS Energy Letters, 2022, 7, 871-879.	17.4	20
39	Comparative Analysis of Solar-to-Fuel Conversion Efficiency: A Direct, One-Step Electrochemical CO₂ Reduction Reactor versus a Two-Step, Cascade Electrochemical CO₂ Reduction Reactor. ACS Energy Letters, 2018, 3, 1892-1897.	17.4	18
40	A Hybrid Catalyst-Bonded Membrane Device for Electrochemical Carbon Monoxide Reduction at Different Relative Humidities. ACS Sustainable Chemistry and Engineering, 2019, 7, 16964-16970.	6.7	14
41	Nanoelectrical and Nanoelectrochemical Imaging of Pt/pâ€Si and Pt/p⁺â€Si Electrodes. ChemSusChem, 2017, 10, 4657-4663.	6.8	13
42	Modellierung, Simulation und Implementierung von Zellen fÃ¼r die solargetriebene Wasserspaltung. Angewandte Chemie, 2016, 128, 13168-13183.	2.0	10
43	Modeling the electrochemical behavior and interfacial junction profiles of bipolar membranes at solar flux relevant operating current densities. Sustainable Energy and Fuels, 2021, 5, 2149-2158.	4.9	9