Nathan S Lewis

List of Publications by Year
in descending order

376 papers	58,808 citations	1792 103 h-index	981 237 g-index
385 all docs	385 docs citations	385 times ranked	41876 citing authors

#	Article	IF	Citations
1	Solar Water Splitting Cells. Chemical Reviews, 2010, 110, 6446-6473.	23.0	8,307
2	Powering the planet: Chemical challenges in solar energy utilization. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 15729-15735.	3.3	7,148
3	Nanostructured Nickel Phosphide as an Electrocatalyst for the Hydrogen Evolution Reaction. Journal of the American Chemical Society, 2013, 135, 9267-9270.	6.6	2,624
4	Toward Cost-Effective Solar Energy Use. Science, 2007, 315, 798-801.	6.0	2,109
5	Research opportunities to advance solar energy utilization. Science, 2016, 351, aad1920.	6.0	1,480
6	Comparison of the device physics principles of planar and radial p-n junction nanorod solar cells. Journal of Applied Physics, 2005, 97, 114302.	1.1	1,261
7	Cross-Reactive Chemical Sensor Arrays. Chemical Reviews, 2000, 100, 2595-2626.	23.0	1,194
8	Amorphous TiO ₂ coatings stabilize Si, GaAs, and GaP photoanodes for efficient water oxidation. Science, 2014, 344, 1005-1009.	6.0	1,189
9	Net-zero emissions energy systems. Science, 2018, 360, .	6.0	1,165
10	Enhanced absorption and carrier collection in Si wire arrays for photovoltaic applications. Nature Materials, 2010, 9, 239-244.	13.3	1,085
11	Highly Active Electrocatalysis of the Hydrogen Evolution Reaction by Cobalt Phosphide Nanoparticles. Angewandte Chemie - International Edition, 2014, 53, 5427-5430.	7.2	1,033
12	Niâ€“Mo Nanopowders for Efficient Electrochemical Hydrogen Evolution. ACS Catalysis, 2013, 3, 166-169.	5.5	725
13	A comparative technoeconomic analysis of renewable hydrogen production using solar energy. Energy and Environmental Science, 2016, 9, 2354-2371.	15.6	688
14	Will Solar-Driven Water-Splitting Devices See the Light of Day?. Chemistry of Materials, 2014, 26, 407-414.	3.2	654
15	Array-Based Vapor Sensing Using Chemically Sensitive, Carbon Blackâ€"Polymer Resistors. Chemistry of Materials, 1996, 8, 2298-2312.	3.2	608
16	Photoelectrochemical Hydrogen Evolution Using Si Microwire Arrays. Journal of the American Chemical Society, 2011, 133, 1216-1219.	6.6	561
17	Photovoltaic Measurements in Single-Nanowire Silicon Solar Cells. Nano Letters, 2008, 8, 710-714.	4.5	550
18	Synthesis, Characterization, and Properties of Metal Phosphide Catalysts for the Hydrogen-Evolution Reaction. Chemistry of Materials, 2016, 28, 6017-6044.	3.2	519

#	Article	IF	Citations
19	An analysis of the optimal band gaps of light absorbers in integrated tandem photoelectrochemical water-splitting systems. Energy and Environmental Science, 2013, 6, 2984.	15.6	497
20	Energy-Conversion Properties of Vapor-Liquid-Solidâ€“Grown Silicon Wire-Array Photocathodes. Science, 2010, 327, 185-187.	6.0	489
21	Solar energy conversion. Physics Today, 2007, 60, 37-42.	0.3	484
22	Evaluation of Pt, Ni, and Niâ€“Mo electrocatalysts for hydrogen evolution on crystalline Si electrodes. Energy and Environmental Science, 2011, 4, 3573.	15.6	440
23	Alkylation of Si Surfaces Using a Two-Step Halogenation/Grignard Route. Journal of the American Chemical Society, 1996, 118, 7225-7226.	6.6	431
24	Electrocatalytic and Photocatalytic Hydrogen Production from Acidic and Neutral-pH Aqueous Solutions Using Iron Phosphide Nanoparticles. ACS Nano, 2014, 8, 11101-11107.	7.3	429
25	Amorphous Molybdenum Phosphide Nanoparticles for Electrocatalytic Hydrogen Evolution. Chemistry of Materials, 2014, 26, 4826-4831.	3.2	379
26	Improvement of photoelectrochemical hydrogen generation by surface modification of p-type silicon semiconductor photocathodes. Journal of the American Chemical Society, 1982, 104, 467-482.	6.6	330
27	Machine-Learning Methods Enable Exhaustive Searches for Active Bimetallic Facets and Reveal Active Site Motifs for CO₂ Reduction. ACS Catalysis, 2017, 7, 6600-6608.	5.5	300
28	Electron Transfer Dynamics in Nanocrystalline Titanium Dioxide Solar Cells Sensitized with Ruthenium or Osmium Polypyridyl Complexes. Journal of Physical Chemistry B, 2001, 105, 392-403.	1.2	276
29	Growth of vertically aligned Si wire arrays over large areas (>1cm2) with Au and Cu catalysts. Applied Physics Letters, 2007, 91, .	1.5	274
30	A quantitative assessment of the competition between water and anion oxidation at WO3 photoanodes in acidic aqueous electrolytes. Energy and Environmental Science, 2012, 5, 5694.	15.6	273
31	Modeling, simulation, and design criteria for photoelectrochemical water-splitting systems. Energy and Environmental Science, 2012, 5, 9922.	15.6	264
32	Electrocatalytic hydrogen evolution using amorphous tungsten phosphide nanoparticles. Chemical Communications, 2014, 50, 11026.	2.2	264
33	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.	15.6	263
34	Electrocatalytic hydrogen evolution by cobalt difluoroboryl-diglyoximate complexes. Chemical Communications, 2005, , 4723.	2.2	256
35	Thin-Film Materials for the Protection of Semiconducting Photoelectrodes in Solar-Fuel Generators. Journal of Physical Chemistry C, 2015, 119, 24201-24228.	1.5	245
36	Light work with water. Nature, 2001, 414, 589-590.	13.7	243

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37	High Aspect Ratio Silicon Wire Array Photoelectrochemical Cells. Journal of the American Chemical Society, 2007, 129, 12346-12347.	6.6	240
38	Nickelâ€“Gallium-Catalyzed Electrochemical Reduction of CO₂ to Highly Reduced Products at Low Overpotentials. ACS Catalysis, 2016, 6, 2100-2104.	5.5	238
39	Role of Long-Duration Energy Storage in Variable Renewable Electricity Systems. Joule, 2020, 4, 1907-1928.	11.7	238
40	Si microwire-array solar cells. Energy and Environmental Science, 2010, 3, 1037.	15.6	217
41	CoP as an Acid-Stable Active Electrocatalyst for the Hydrogen-Evolution Reaction: Electrochemical Synthesis, Interfacial Characterization and Performance Evaluation. Journal of Physical Chemistry C, 2014, 118, 29294-29300.	1.5	216
42	Comparisons between Mammalian and Artificial Olfaction Based on Arrays of Carbon Blackâ^'Polymer Composite Vapor Detectors. Accounts of Chemical Research, 2004, 37, 663-672.	7.6	215
43	Geophysical constraints on the reliability of solar and wind power in the United States. Energy and Environmental Science, 2018, 11, 914-925.	15.6	211
44	Principles and implementations of electrolysis systems for water splitting. Materials Horizons, 2016, 3, 169-173.	6.4	202
45	Comparison of the Electrical Properties and Chemical Stability of Crystalline Silicon(111) Surfaces Alkylated Using Grignard Reagents or Olefins with Lewis Acid Catalysts. Journal of Physical Chemistry B, 2003, 107, 5404-5412.	1.2	199
46	High-performance Si microwire photovoltaics. Energy and Environmental Science, 2011, 4, 866.	15.6	196
47	Methods for comparing the performance of energy-conversion systems for use in solar fuels and solar electricity generation. Energy and Environmental Science, 2015, 8, 2886-2901.	15.6	196
48	Hydrogen Evolution from Pt/Ru-Coated p-Type WSe₂ Photocathodes. Journal of the American Chemical Society, 2013, 135, 223-231.	6.6	192
49	Preparation of air-stable, low recombination velocity Si(111) surfaces through alkyl termination. Applied Physics Letters, 2000, 77, 1988-1990.	1.5	185
50	Hydrogen-evolution characteristics of Niâ€“Mo-coated, radial junction, n+p-silicon microwire array photocathodes. Energy and Environmental Science, 2012, 5, 9653.	15.6	182
51	Stable solar-driven oxidation of water by semiconducting photoanodes protected by transparent catalytic nickel oxide films. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 3612-3617.	3.3	180
52	Spectroscopic Studies of the Modification of Crystalline Si(111) Surfaces with Covalently-Attached Alkyl Chains Using a Chlorination/Alkylation Method. Journal of Physical Chemistry B, 2001, 105, 10266-10277.	1.2	176
53	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.	8.8	173
54	Decoupled electrochemical water-splitting systems: a review and perspective. Energy and Environmental Science, 2021, 14, 4740-4759.	15.6	172

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55	A taxonomy for solar fuels generators. Energy and Environmental Science, 2015, 8, 16-25.	15.6	170
56	An Investigation of the Concentration Dependence and Response to Analyte Mixtures of Carbon Black/Insulating Organic Polymer Composite Vapor Detectors. Analytical Chemistry, 2000, 72, 658-668.	3.2	168
57	Developing a scalable artificial photosynthesis technology through nanomaterials by design. Nature Nanotechnology, 2016, 11, 1010-1019.	15.6	162
58	Quantitative Study of the Resolving Power of Arrays of Carbon Blackâ"Polymer Composites in Various Vapor-Sensing Tasks. Analytical Chemistry, 1998, 70, 4177-4190.	3.2	159
59	Chemical and electronic characterization of methyl-terminated Si(111) surfaces by high-resolution synchrotron photoelectron spectroscopy. Physical Review B, 2005, 72, .	1.1	159
60	Crystalline nickel manganese antimonate as a stable water-oxidation catalyst in aqueous 1.0 M H₂SO₄. Energy and Environmental Science, 2017, 10, 2103-2108.	15.6	158
61	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.	15.6	152
62	Photoelectrochemistry of coreâ€"shell tandem junction nâ€"p⁺-Si/n-WO₃microwire array photoelectrodes. Energy and Environmental Science, 2014, 7, 779-790.	15.6	152
63	Formation of Covalently Attached Polymer Overlayers on Si(111) Surfaces Using Ring-Opening Metathesis Polymerization Methods. Langmuir, 2001, 17, 1321-1323.	1.6	151
64	Chemical studies of the passivation of GaAs surface recombination using sulfides and thiols. Journal of Applied Physics, 1991, 70, 7449-7467.	1.1	149
65	Chemical Control of Charge Transfer and Recombination at Semiconductor Photoelectrode Surfaces. Inorganic Chemistry, 2005, 44, 6900-6911.	1.9	149
66	Direct observation of the energetics at a semiconductor/liquid junction by operando X-ray photoelectron spectroscopy. Energy and Environmental Science, 2015, 8, 2409-2416.	15.6	149
67	Simulations of the irradiation and temperature dependence of the efficiency of tandem photoelectrochemical water-splitting systems. Energy and Environmental Science, 2013, 6, 3605.	15.6	148
68	Flexible Polymerâ€Embedded Si Wire Arrays. Advanced Materials, 2009, 21, 325-328.	11.1	144
69	Stable Solar-Driven Water Oxidation to O₂(g) by Ni-Oxide-Coated Silicon Photoanodes. Journal of Physical Chemistry Letters, 2015, 6, 592-598.	2.1	144
70	Electrical Characteristics and Chemical Stability of Non-Oxidized, Methyl-Terminated Silicon Nanowires. Journal of the American Chemical Society, 2006, 128, 8990-8991.	6.6	142
71	Chemically derivatized n-type silicon photoelectrodes. Stabilization to surface corrosion in aqueous electrolyte solutions and mediation of oxidation reactions by surface-attached electroactive ferrocene reagents. Journal of the American Chemical Society, 1979, 101, 1378-1385.	6.6	141
72	Photoelectrochemical Behavior of n-type Si(100) Electrodes Coated with Thin Films of Manganese Oxide Grown by Atomic Layer Deposition. Journal of Physical Chemistry C, 2013, 117, 4931-4936.	1.5	137

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73	570 mV photovoltage, stabilized n-Si/CoO_xheterojunction photoanodes fabricated using atomic layer deposition. Energy and Environmental Science, 2016, 9, 892-897.	15.6	137
74	Progress in Understanding Electron-Transfer Reactions at Semiconductor/Liquid Interfaces. Journal of Physical Chemistry B, 1998, 102, 4843-4855.	1.2	136
75	Electrocatalysis of the hydrogen-evolution reaction by electrodeposited amorphous cobalt selenide films. Journal of Materials Chemistry A, 2014, 2, 13835-13839.	5.2	133
76	Principles and Applications of Semiconductor Photoelectrochemistry. Progress in Inorganic Chemistry, 2007, , 21-144.	3.0	130
77	Interface engineering of the photoelectrochemical performance of Ni-oxide-coated n-Si photoanodes by atomic-layer deposition of ultrathin films of cobalt oxide. Energy and Environmental Science, 2015, 8, 2644-2649.	15.6	130
78	Stabilization of Si Photoanodes in Aqueous Electrolytes through Surface Alkylation. Journal of Physical Chemistry B, 1998, 102, 4058-4060.	1.2	129
79	Improved Stability of Polycrystalline Bismuth Vanadate Photoanodes by Use of Dual-Layer Thin TiO₂/Ni Coatings. Journal of Physical Chemistry C, 2014, 118, 19618-19624.	1.5	129
80	Stabilization of Si microwire arrays for solar-driven H₂O oxidation to O₂(g) in 1.0 M KOH(aq) using conformal coatings of amorphous TiO₂. Energy and Environmental Science, 2015, 8, 203-207.	15.6	128
81	Operando Spectroscopic Analysis of CoP Films Electrocatalyzing the Hydrogen-Evolution Reaction. Journal of the American Chemical Society, 2017, 139, 12927-12930.	6.6	127
82	Solar energy conversion via hot electron internal photoemission in metallic nanostructures: Efficiency estimates. Journal of Applied Physics, 2014, 115, .	1.1	126
83	Low-Temperature STM Images of Methyl-Terminated Si(111) Surfaces. Journal of Physical Chemistry B, 2005, 109, 671-674.	1.2	124
84	A Comparison Between the Behavior of Nanorod Array and Planar Cd(Se, Te) Photoelectrodes. Journal of Physical Chemistry C, 2008, 112, 6186-6193.	1.5	122
85	Operando Synthesis of Macroporous Molybdenum Diselenide Films for Electrocatalysis of the Hydrogen-Evolution Reaction. ACS Catalysis, 2014, 4, 2866-2873.	5.5	122
86	In situ recombination junction between p-Si and TiO ₂ enables high-efficiency monolithic perovskite/Si tandem cells. Science Advances, 2018, 4, eaau9711.	4.7	122
87	Detection and Classification of Volatile Organic Amines and Carboxylic Acids Using Arrays of Carbon Black-Dendrimer Composite Vapor Detectors. Chemistry of Materials, 2005, 17, 2904-2911.	3.2	120
88	Modeling, Simulation, and Implementation of Solarâ€Driven Waterâ€Splitting Devices. Angewandte Chemie - International Edition, 2016, 55, 12974-12988.	7.2	119
89	Fermi Golden Rule Approach to Evaluating Outer-Sphere Electron-Transfer Rate Constants at Semiconductor/Liquid Interfaces. Journal of Physical Chemistry B, 1997, 101, 11152-11159.	1.2	117
90	Anchoring Group and Auxiliary Ligand Effects on the Binding of Ruthenium Complexes to Nanocrystalline TiO2Photoelectrodes. Journal of Physical Chemistry B, 2004, 108, 15640-15651.	1.2	117

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91	Enhanced Stability and Activity for Water Oxidation in Alkaline Media with Bismuth Vanadate Photoelectrodes Modified with a Cobalt Oxide Catalytic Layer Produced by Atomic Layer Deposition. Journal of Physical Chemistry Letters, 2013, 4, 4188-4191.	2.1	116
92	Highly branched cobalt phosphide nanostructures for hydrogen-evolution electrocatalysis. Journal of Materials Chemistry A, 2015, 3, 5420-5425.	5.2	116
93	Electrochemical Properties of (111)-Oriented n-Si Surfaces Derivatized with Covalently- Attached Alkyl Chains. Journal of Physical Chemistry B, 1998, 102, 1067-1070.	1.2	114
94	Infrared and X-ray Photoelectron Spectroscopic Studies of the Reactions of Hydrogen-Terminated Crystalline Si(111) and Si(100) Surfaces with Br2, I2, and Ferrocenium in Alcohol Solvents. Journal of Physical Chemistry B, 2002, 106, 3639-3656.	1.2	114
95	Chemical and Electrical Passivation of Silicon (111) Surfaces through Functionalization with Sterically Hindered Alkyl Groups. Journal of Physical Chemistry B, 2006, 110, 14800-14808.	1.2	114
96	The Influence of Structure and Processing on the Behavior of TiO₂ Protective Layers for Stabilization of n-Si/TiO₂/Ni Photoanodes for Water Oxidation. ACS Applied Materials & Interfaces, 2015, 7, 15189-15199.	4.0	114
97	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.	10.2	114
98	A Quantitative Investigation of the Openâ€Circuit Photovoltage at the Semiconductor/Liquid Interface. Journal of the Electrochemical Society, 1984, 131, 2496-2503.	1.3	112
99	Preparation and Properties of Vapor Detector Arrays Formed from Poly(3,4-ethylenedioxy)thiopheneâ^'Poly(styrene sulfonate)/Insulating Polymer Composites. Analytical Chemistry, 2000, 72, 3181-3190.	3.2	112
100	Stabilization of n-cadmium telluride photoanodes for water oxidation to O₂(g) in aqueous alkaline electrolytes using amorphous TiO₂ films formed by atomic-layer deposition. Energy and Environmental Science, 2014, 7, 3334-3337.	15.6	111
101	High Quantum Yield Sensitization of Nanocrystalline Titanium Dioxide Photoelectrodes withcis-Dicyanobis(4,4â€˜-dicarboxy-2,2â€˜-bipyridine)osmium(II) or Tris(4,4â€˜-dicarboxy-2,2â€˜-bipyridine)osmium(II) Complexes. Journal of Physical Chemistry B, 2000, 104, 3488-3491.	1.2	109
102	Proton exchange membrane electrolysis sustained by water vapor. Energy and Environmental Science, 2011, 4, 2993.	15.6	109
103	Use of Bipolar Membranes for Maintaining Steadyâ€State pH Gradients in Membraneâ€Supported, Solarâ€Driven Water Splitting. ChemSusChem, 2014, 7, 3021-3027.	3.6	107
104	Electrical conductivity, ionic conductivity, optical absorption, and gas separation properties of ionically conductive polymer membranes embedded with Si microwire arrays. Energy and Environmental Science, 2011, 4, 1772.	15.6	103
105	Optical, electrical, and solar energy-conversion properties of gallium arsenide nanowire-array photoanodes. Energy and Environmental Science, 2013, 6, 1879.	15.6	102
106	High-Resolution X-ray Photoelectron Spectroscopic Studies of Alkylated Silicon(111) Surfaces. Journal of Physical Chemistry B, 2005, 109, 3930-3937.	1.2	101
107	"Ideal" behavior of the open circuit voltage of semiconductor/liquid junctions. The Journal of Physical Chemistry, 1989, 93, 3735-3740.	2.9	95
108	Free-Energy Dependence of Electron-Transfer Rate Constants at Si/Liquid Interfaces. Journal of Physical Chemistry B, 1997, 101, 11136-11151.	1.2	92

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109	Geophysical constraints on the reliability of solar and wind power worldwide. Nature Communications, 2021, 12, 6146.	5.8	90
110	Modeling, Simulation, and Fabrication of a Fully Integrated, Acidâ€stable, Scalable Solarâ€Driven Waterâ€Splitting System. ChemSusChem, 2015, 8, 544-551.	3.6	89
111	A 14% efficient nonaqueous semiconductor/liquid junction solar cell. Applied Physics Letters, 1984, 45, 1095-1097.	1.5	87
112	Investigation of the Size-Scaling Behavior of Spatially Nonuniform Barrier Height Contacts to Semiconductor Surfaces Using Ordered Nanometer-Scale Nickel Arrays on Silicon Electrodes. Journal of Physical Chemistry B, 2001, 105, 12303-12318.	1.2	87
113	Combinatorial synthesis and high-throughput photopotential and photocurrent screening of mixed-metal oxides for photoelectrochemical water splitting. Energy and Environmental Science, 2009, 2, 103-112.	15.6	87
114	820 mV open-circuit voltages from Cu2O/CH3CN junctions. Energy and Environmental Science, 2011, 4, 1311.	15.6	87
115	Protection of inorganic semiconductors for sustained, efficient photoelectrochemical water oxidation. Catalysis Today, 2016, 262, 11-23.	2.2	87
116	Electronic properties of junctions between silicon and organic conducting polymers. Nature, 1990, 346, 155-157.	13.7	85
117	Flexible, Polymerâ€Supported, Si Wire Array Photoelectrodes. Advanced Materials, 2010, 22, 3277-3281.	11.1	85
118	Measurement of the Band Bending and Surface Dipole at Chemically Functionalized Si(111)/Vacuum Interfaces. Journal of Physical Chemistry C, 2013, 117, 18031-18042.	1.5	85
119	Silicon Microwire Arrays for Solar Energy-Conversion Applications. Journal of Physical Chemistry C, 2014, 118, 747-759.	1.5	85
120	10 â€, Î¼ m minority-carrier diffusion lengths in Si wires synthesized by Cu-catalyzed vapor-liquid-solid growth. Applied Physics Letters, 2009, 95, .	1.5	84
121	Low Temperature Solution-Phase Deposition of SnS Thin Films. Chemistry of Materials, 2014, 26, 5444-5446.	3.2	84
122	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.	15.6	82
123	Relationships among Resonant Frequency Changes on a Coated Quartz Crystal Microbalance, Thickness Changes, and Resistance Responses of Polymerâ^'Carbon Black Composite Chemiresistors. Analytical Chemistry, 2000, 72, 2008-2015.	3.2	80
124	Transmission Infrared Spectroscopy of Methyl- and Ethyl-Terminated Silicon(111) Surfaces. Journal of Physical Chemistry B, 2006, 110, 7349-7356.	1.2	80
125	Use of Compatible Polymer Blends To Fabricate Arrays of Carbon Blackâ^'Polymer Composite Vapor Detectors. Analytical Chemistry, 1998, 70, 2560-2564.	3.2	79
126	Electrical Properties of Junctions between Hg and Si(111) Surfaces Functionalized with Short-Chain Alkylsâ€. Journal of Physical Chemistry C, 2007, 111, 17690-17699.	1.5	78

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127	Comparative Study in Acidic and Alkaline Media of the Effects of pH and Crystallinity on the Hydrogen-Evolution Reaction on MoS₂ and MoSe₂. ACS Energy Letters, 2017, 2, 2234-2238.	8.8	78
128	Enhancing the activity of oxygen-evolution and chlorine-evolution electrocatalysts by atomic layer deposition of TiO₂. Energy and Environmental Science, 2019, 12, 358-365.	15.6	78
129	Crystalline nickel, cobalt, and manganese antimonates as electrocatalysts for the chlorine evolution reaction. Energy and Environmental Science, 2019, 12, 1241-1248.	15.6	78
130	Mechanistic studies of light-induced charge separation at semiconductor/liquid interfaces. Accounts of Chemical Research, 1990, 23, 176-183.	7.6	77
131	Rate Constants for Charge Transfer Across Semiconductor-Liquid Interfaces. Science, 1996, 274, 969-972.	6.0	77
132	Electrical, Photoelectrochemical, and Photoelectron Spectroscopic Investigation of the Interfacial Transport and Energetics of Amorphous TiO₂/Si Heterojunctions. Journal of Physical Chemistry C, 2016, 120, 3117-3129.	1.5	77
133	What a Difference a Bond Makes: The Structural, Chemical, and Physical Properties of Methyl-Terminated Si(111) Surfaces. Accounts of Chemical Research, 2014, 47, 3037-3044.	7.6	75
134	Reduction of Aqueous CO₂ to 1-Propanol at MoS₂ Electrodes. Chemistry of Materials, 2018, 30, 4902-4908.	3.2	73
135	Chlorination of hydrogen-terminated silicon (111) surfaces. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2005, 23, 1100-1106.	0.9	71
136	Repeated epitaxial growth and transfer of arrays of patterned, vertically aligned, crystalline Si wires from a single Si(111) substrate. Applied Physics Letters, 2008, 93, .	1.5	71
137	Sputtered NiO_x Films for Stabilization of p⁺nâ€InP Photoanodes for Solarâ€Driven Water Oxidation. Advanced Energy Materials, 2015, 5, 1402276.	10.2	71
138	Comparison of odor detection thresholds and odor discriminablities of a conducting polymer composite electronic nose versus mammalian olfaction. Sensors and Actuators B: Chemical, 2001, 72, 41-50.	4.0	68
139	Characterization of Electronic Transport through Amorphous TiO₂ Produced by Atomic Layer Deposition. Journal of Physical Chemistry C, 2019, 123, 20116-20129.	1.5	68
140	Photoelectrochemical reduction of N,N'-dimethyl-4,4'-bipyridinium in aqueous media at p-type silicon: sustained photogeneration of a species capable of evolving hydrogen. Journal of the American Chemical Society, 1979, 101, 7721-7723.	6.6	66
141	Properties of Vapor Detector Arrays Formed through Plasticization of Carbon Blackâ^'Organic Polymer Composites. Analytical Chemistry, 2002, 74, 1307-1315.	3.2	66
142	Covalent Attachment of Acetylene and Methylacetylene Functionality to Si(111) Surfaces: Scaffolds for Organic Surface Functionalization while Retaining Siâ^'C Passivation of Si(111) Surface Sites. Journal of the American Chemical Society, 2006, 128, 9990-9991.	6.6	66
143	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.	15.6	66
144	The Predominance of Hydrogen Evolution on Transition Metal Sulfides and Phosphides under CO₂ Reduction Conditions: An Experimental and Theoretical Study. ACS Energy Letters, 2018, 3, 1450-1457.	8.8	66

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145	Current Density versus Potential Characteristics of Dye-Sensitized Nanostructured Semiconductor Photoelectrodes. 1. Analytical Expressions. Journal of Physical Chemistry B, 2004, 108, 5269-5281.	1.2	65
146	Membranes for artificial photosynthesis. Energy and Environmental Science, 2017, 10, 1320-1338.	15.6	65
147	Infrared Spectroscopic Investigation of the Reaction of Hydrogen-Terminated, (111)-Oriented, Silicon Surfaces with Liquid Methanol. Journal of Physical Chemistry B, 2006, 110, 20426-20434.	1.2	64
148	Comparison of the Photoelectrochemical Behavior of H-Terminated and Methyl-Terminated Si(111) Surfaces in Contact with a Series of One-Electron, Outer-Sphere Redox Couples in CH₃CN. Journal of Physical Chemistry C, 2012, 116, 23569-23576.	1.5	64
149	Measurement of minority-carrier diffusion lengths using wedge-shaped semiconductor photoelectrodes. Energy and Environmental Science, 2014, 7, 3424-3430.	15.6	63
150	630â€mV open circuit voltage, 12% efficientnâ€Si liquid junction. Applied Physics Letters, 1984, 45, 423-425.	1.5	60
151	Size-dependent electrical behavior of spatially inhomogeneous barrier height regions on silicon. Applied Physics Letters, 2000, 77, 2698-2700.	1.5	60
152	Functional integration of Niâ€“Mo electrocatalysts with Si microwire array photocathodes to simultaneously achieve high fill factors and light-limited photocurrent densities for solar-driven hydrogen evolution. Energy and Environmental Science, 2015, 8, 2977-2984.	15.6	60
153	Comparison of the Performance of CoP-Coated and Pt-Coated Radial Junction n⁺p-Silicon Microwire-Array Photocathodes for the Sunlight-Driven Reduction of Water to H₂(g). Journal of Physical Chemistry Letters, 2015, 6, 1679-1683.	2.1	60
154	Chemical modification of n-GaAs electrodes with Os3+ gives a 15% efficient solar cell. Nature, 1987, 326, 861-863.	13.7	59
155	Chemiresistors for Array-Based Vapor Sensing Using Composites of Carbon Black with Low Volatility Organic Molecules. Chemistry of Materials, 2006, 18, 5193-5202.	3.2	59
156	Photoelectrochemical oxidation of anions by WO3 in aqueous and nonaqueous electrolytes. Energy and Environmental Science, 2013, 6, 2646.	15.6	57
157	Combined Theoretical and Experimental Study of Band-Edge Control of Si through Surface Functionalization. Journal of Physical Chemistry C, 2013, 117, 5188-5194.	1.5	57
158	Exploitation of spatiotemporal information and geometric optimization of signal/noise performance using arrays of carbon black-polymer composite vapor detectors. Sensors and Actuators B: Chemical, 2002, 82, 54-74.	4.0	56
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