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## Recent progress in alkaline water electrolysis for hydrogen production and applications

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2142	Heterogeneous anion-selective membranes: Influence of a water-soluble component in the membrane on the morphology and ionic conductivity. <b>2012</b> , 401-402, 83-88	16
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2018	Simulation tool based on a physics model and an electrical analogy for an alkaline electrolyser. <b>2014</b> , 250, 58-67	32
2017	Hydroxide-ion induced degradation pathway for dimethylimidazolium groups in anion exchange membranes. <b>2014</b> , 462, 112-118	34
2016	Renewable hydrogen generation from a dual-circuit redox flow battery. <b>2014</b> , 7, 2350-2358	76
2015	Optimum Operating Conditions for Alkaline Water Electrolysis Coupled with Solar PV Energy System. <b>2014</b> , 39, 4211-4220	20
2014	Bulk protonic conductivity in a cephalopod structural protein. <b>2014</b> , 6, 596-602	166
2013	Performance optimization of an electromembrane reactor for recycling and resource recovery of desulfurization residuals. <b>2014</b> , 60, 2613-2624	4
2012	Water Splitting over Graphene-Based Catalysts: Ab Initio Calculations. <b>2014</b> , 4, 2016-2021	47
2011	The mechanism and kinetics of electrochemical water oxidation at oxidized metal and metal oxide electrodes. Part 2. The surfaquo group mechanism: A mini review. <b>2014</b> , 45, 56-59	29
2010	An efficient route for catalytic activity promotion via hybrid electro-depositional modification on commercial nickel foam for hydrogen evolution reaction in alkaline water electrolysis. <b>2014</b> , 313, 512-523	17

2009	The mechanism and kinetics of electrochemical water oxidation at oxidized metal and metal oxide electrodes. Part 1. General considerations: A mini review. <b>2014</b> , 45, 60-62	35
2008	PV system design for powering an industrial unit for hydrogen production. <b>2014</b> , 39, 15188-15195	48
2007	Sustainability index approach as a selection criteria for energy storage system of an intermittent renewable energy source. <b>2014</b> , 136, 909-920	56
2006	In situ diagnostic techniques for characterisation of polymer electrolyte membrane water electrolyzers I Flow visualisation and electrochemical impedance spectroscopy. <b>2014</b> , 39, 4468-4482	86
2005	Preparation and Hydrolysis of Aluminum Based Composites for Hydrogen Production in Pure Water. <b>2014</b> , 55, 892-898	16
2004	A systematic study on electrolytic production of hydrogen gas by using graphite as electrode. <b>2014</b> , 17, 83-87	27
2003	Highly efficient platinum group metal free based membrane-electrode assembly for anion exchange membrane water electrolysis. <b>2014</b> , 53, 1378-81	160
2002	Introduction to Electrochemical Energy Storage and Conversion. <b>2015</b> , 3-32	
2001	Advanced Materials for Water Electrolysis. <b>2015</b> , 551-584	
2000	Advanced Practical Technologies for Water Electrolysis. <b>2015</b> , 585-599	
1999	Distributed Energy Systems Based on Water Electrolysis Driven by Renewable Electricity. <b>2015</b> , 1-12	
1998	Clean Energy-Based Production of Hydrogen: An Energy Carrier. <b>2015</b> , 1-30	0
1997	Blending Cr <sub>2</sub> O <sub>3</sub> into a NiO/Ni Electrocatalyst for Sustained Water Splitting. <b>2015</b> , 127, 12157-12161	43
1996	Self-Supported Cobalt Phosphide Mesoporous Nanorod Arrays: A Flexible and Bifunctional Electrode for Highly Active Electrocatalytic Water Reduction and Oxidation. <b>2015</b> , 25, 7337-7347	593
1995	The synthesis of nanostructured Ni <sub>5</sub> P <sub>4</sub> films and their use as a non-noble bifunctional electrocatalyst for full water splitting. <b>2015</b> , 54, 12361-5	630
1994	The Effects of Voltage Flow and pH Value in Alkaline Electrolyser System to Performance. <b>2015</b> , 773-774, 440-444	1
1993	NiSe Nanowire Film Supported on Nickel Foam: An Efficient and Stable 3D Bifunctional Electrode for Full Water Splitting. <b>2015</b> , 54, 9351-5	1100
1992	Electrodeposited Ni-P Alloy Nanoparticle Films for Efficiently Catalyzing Hydrogen- and Oxygen-Evolution Reactions. <b>2015</b> , 1, 558-561	68

1991	NiSe Nanowire Film Supported on Nickel Foam: An Efficient and Stable 3D Bifunctional Electrode for Full Water Splitting. <b>2015</b> , 127, 9483-9487	304
1990	Silicone Nanofilament Supported Nickel Oxide: A New Concept for Oxygen Evolution Catalysts in Water Electrolyzers. <b>2015</b> , 2, 1500216	9
1989	The Synthesis of Nanostructured Ni <sub>5</sub> P <sub>4</sub> Films and their Use as a Non-Noble Bifunctional Electrocatalyst for Full Water Splitting. <b>2015</b> , 127, 12538-12542	207
1988	Blending Cr <sub>2</sub> O <sub>3</sub> into a NiO-Ni electrocatalyst for sustained water splitting. <b>2015</b> , 54, 11989-93	132
1987	Characterization of Anion Exchange Membrane Containing Epoxy Ring and C=C Bond Quaternized by Various Amine Groups for Application in Fuel Cells. <b>2015</b> , 8, 7084-7099	24
1986	N-doped carbon@NiAl <sub>2</sub> O <sub>3</sub> nanosheet array@graphene oxide composite as an electrocatalyst for hydrogen evolution reaction in alkaline medium. <b>2015</b> , 293, 178-186	43
1985	Novel Co-Ni-graphene composite electrodes for hydrogen production. <b>2015</b> , 5, 47398-47407	40
1984	Microstructure and hydrogen evolution catalytic properties of Ni-Sn alloys prepared by electrodeposition method. <b>2015</b> , 500, 51-57	31
1983	Effects of hydrogen and oxygen enrichment on performance and emissions of an SI engine under idle operating condition. <b>2015</b> , 40, 8607-8619	20
1982	Preparation of anion exchange membrane using polyvinyl chloride (PVC) for alkaline water electrolysis. <b>2015</b> , 32, 1896-1901	16
1981	High-activity electrodeposited NiW catalysts for hydrogen evolution in alkaline water electrolysis. <b>2015</b> , 349, 629-635	55
1980	Preparation of nanostructured mesoporous NiCo <sub>2</sub> O <sub>4</sub> and its electrocatalytic activities for water oxidation. <b>2015</b> , 24, 271-277	19
1979	Nanostructured cobalt phosphide-based films as bifunctional electrocatalysts for overall water splitting. <b>2015</b> , 5, 105814-105819	22
1978	Comprehensive Study of an Earth-Abundant Bifunctional 3D Electrode for Efficient Water Electrolysis in Alkaline Medium. <b>2015</b> , 7, 28148-55	31
1977	Tweaking the composition of NiMoZn alloy electrocatalyst for enhanced hydrogen evolution reaction performance. <b>2015</b> , 12, 9-18	99
1976	H <sub>2</sub> generation from alkaline electrolyzer. <b>2015</b> , 4, 365-381	53
1975	High-pressure water electrolysis: Electrochemical mitigation of product gas crossover. <b>2015</b> , 156, 321-327	29
1974	In situ cobalt-cobalt oxide/N-doped carbon hybrids as superior bifunctional electrocatalysts for hydrogen and oxygen evolution. <b>2015</b> , 137, 2688-94	1328

1973	The electronic structure of the $\text{Ni}(\text{OH})_2$ films: Influence on the production of the high performance $\text{Ni}$ catalyst surface. <b>2015</b> , 282, 421-428	14
1972	Modeling of electrochemically generated bubbly flow under buoyancy-driven and forced convection. <b>2015</b> , 85, 292-299	21
1971	Demonstration of the operation and performance of a pressurised alkaline electrolyser operating in the hydrogen fuelling station in Porsgrunn, Norway. <b>2015</b> , 94, 40-50	17
1970	High surface area coatings for hydrogen evolution cathodes prepared by magnetron sputtering. <b>2015</b> , 40, 2452-2459	6
1969	Design of Experiments for Pulse Reverse Electrodeposition of Graphene Oxide toward Hydrogen Evolution Reaction. <b>2015</b> , 4, M7-M17	12
1968	Electrocatalytic activities of cathode electrodes for water electrolysis using tetra-alkyl-ammonium-sulfonic acid ionic liquid as electrolyte. <b>2015</b> , 280, 12-17	15
1967	A strategy to synergistically increase the number of active edge sites and the conductivity of $\text{MoS}_2$ nanosheets for hydrogen evolution. <b>2015</b> , 7, 8731-8	101
1966	Highly active porous nickel-film electrode via polystyrene microsphere template-assisted composite electrodeposition for hydrogen-evolution reaction in alkaline medium. <b>2015</b> , 58, 501-507	16
1965	Cobalt-iron (oxy)hydroxide oxygen evolution electrocatalysts: the role of structure and composition on activity, stability, and mechanism. <b>2015</b> , 137, 3638-48	1222
1964	From Water Oxidation to Reduction: Homologous $\text{Ni}/\text{Co}$ Based Nanowires as Complementary Water Splitting Electrocatalysts. <b>2015</b> , 5, 1402031	372
1963	Enhancement of hydrogen evolution in alkaline water electrolysis by using nickel-rare earth alloys. <b>2015</b> , 40, 4295-4302	65
1962	Enhancement of photovoltaic properties of $\text{CH}_3\text{NH}_3\text{PbBr}_3$ heterojunction solar cells by modifying mesoporous $\text{TiO}_2$ surfaces with carboxyl groups. <b>2015</b> , 3, 9264-9270	65
1961	Ultrathin platinum nanowires grown on single-layered nickel hydroxide with high hydrogen evolution activity. <b>2015</b> , 6, 6430	719
1960	Fabrication of spinel ferrite based alkaline anion exchange membrane water electrolyzers for hydrogen production. <b>2015</b> , 5, 34100-34108	33
1959	$\text{Ni}_3\text{S}_2$ nanosheets array supported on Ni foam: A novel efficient three-dimensional hydrogen-evolving electrocatalyst in both neutral and basic solutions. <b>2015</b> , 40, 4727-4732	140
1958	Synthesis and characterization of $\text{NiFe}_2\text{O}_4$ electrocatalyst for the hydrogen evolution reaction in alkaline water electrolysis using different polymer binders. <b>2015</b> , 285, 217-226	49
1957	Effect of hydrogen and oxygen addition as a mixture on emissions and performance characteristics of a gasoline engine. <b>2015</b> , 40, 8750-8760	27
1956	Hydrogen bubble growth at micro-electrode under magnetic field. <b>2015</b> , 754, 22-29	25

1955	Low-cost and energy-efficient asymmetric nickel electrode for alkaline water electrolysis. <b>2015</b> , 40, 10720-10725	
1954	Porous poly(perfluorosulfonic acid) membranes for alkaline water electrolysis. <b>2015</b> , 493, 589-598	28
1953	Hydrogen oxidation reaction on Pd(111) electrode in alkaline media: Ab-initio DFT study of OH effects. <b>2015</b> , 1063, 63-69	2
1952	Hydrogen production using high-pressure electrolyzers. <b>2015</b> , 179-224	5
1951	Dynamics of Single Hydrogen Bubbles at a Platinum Microelectrode. <b>2015</b> , 31, 8184-93	53
1950	Hydrogen: A sustainable fuel for future of the transport sector. <b>2015</b> , 51, 623-633	296
1949	Nickel-rich layered LiNi <sub>1-x</sub> M <sub>x</sub> O <sub>2</sub> (M = Mn, Fe, and Co) electrocatalysts with high oxygen evolution reaction activity. <b>2015</b> , 3, 16604-16612	37
1948	Desulfurization kinetics and mineral phase evolution of bauxite water slurry (BWS) electrolysis. <b>2015</b> , 139, 17-24	20
1947	Life cycle assessment of PEM FC applications: electric mobility and ECHP. <b>2015</b> , 8, 1969-1985	55
1946	GIS-based analysis of hydrogen production from geothermal electricity using CO <sub>2</sub> as working fluid in Algeria. <b>2015</b> , 40, 15244-15253	29
1945	Cost-effective design of the alkaline electrolyser for enhanced electrochemical performance and reduced electrode degradation. <b>2015</b> , 10, 452-459	7
1944	Reaction phenomena of catalytic partial oxidation of methane under the impact of carbon dioxide addition and heat recirculation. <b>2015</b> , 82, 206-217	25
1943	Autonomous hydrogen production system. <b>2015</b> , 40, 7465-7474	11
1942	New Insights into Corrosion of Ruthenium and Ruthenium Oxide Nanoparticles in Acidic Media. <b>2015</b> , 119, 10140-10147	113
1941	Novel hydrogen production and power generation system using metal hydride. <b>2015</b> , 40, 6197-6206	20
1940	Enhancing vapor generation at a liquid-solid interface using micro/nanoscale surface structures fabricated by femtosecond laser surface processing. <b>2015</b> ,	1
1939	Atomistic understanding of hydrogen loading phenomenon into palladium cathode: A simple nanocluster approach and electrochemical evidence. <b>2015</b> , 127, 575-581	7
1938	Syngas and Synfuels from H <sub>2</sub> O and CO <sub>2</sub> : Current Status. <b>2015</b> , 87, 354-375	63

1937	Membrane reactors for the desulfurization of power plant gas emissions and transportation fuels. <b>2015</b> , 397-437	
1936	Electrodeposition of hierarchically structured three-dimensional nickel-iron electrodes for efficient oxygen evolution at high current densities. <b>2015</b> , 6, 6616	1347
1935	Spot-free catalysis using gold carbon nanotube & gold graphene composites for hydrogen evolution reaction. <b>2015</b> , 288, 441-450	18
1934	Enhanced Activity and Stability of TiO <sub>2</sub> -Coated Cobalt/Carbon Catalysts for Electrochemical Water Oxidation. <b>2015</b> , 5, 3463-3469	42
1933	Ultrathin Two-Dimensional Free-Standing Sandwiched NiFe/C for High-Efficiency Oxygen Evolution Reaction. <b>2015</b> , 7, 9203-10	81
1932	From Waste to gold: a one-pot method to synthesize ultrafinely dispersed Fe <sub>2</sub> O <sub>3</sub> -based nanoparticles on N-doped carbon for synergistic and efficient water splitting. <b>2015</b> , 3, 11756-11761	48
1931	Hydrogen evolution on plasma carburised nickel and effect of iron deposition from the electrolyte in alkaline water electrolysis. <b>2015</b> , 167, 61-68	16
1930	Perovskite-Hematite Tandem Cells for Efficient Overall Solar Driven Water Splitting. <b>2015</b> , 15, 3833-9	211
1929	High efficiency solar-to-hydrogen conversion on a monolithically integrated InGaN/GaN/Si adaptive tunnel junction photocathode. <b>2015</b> , 15, 2721-6	86
1928	Electrochemical Generation of a Hydrogen Bubble at a Recessed Platinum Nanopore Electrode. <b>2015</b> , 31, 4573-81	65
1927	Electrochemical performance of tungsten electrode as cathode for hydrogen evolution in alkaline solutions. <b>2015</b> , 40, 6276-6282	8
1926	Co <sub>2</sub> Nanocrystal ink printed on carbon fiber paper as a large-area electrode for electrochemical water splitting. <b>2015</b> , 51, 8066-9	127
1925	Experimental investigation and thermo-chemical modeling of methane pyrolysis in a liquid metal bubble column reactor with a packed bed. <b>2015</b> , 40, 14134-14146	58
1924	Toward the zero-emission coal-to-liquids plant. <b>2015</b> , 03, 147-153	1
1923	Palladium-Based Nanomaterials: Synthesis and Electrochemical Applications. <b>2015</b> , 115, 11999-2044	490
1922	An amorphous CoSe film behaves as an active and stable full water-splitting electrocatalyst under strongly alkaline conditions. <b>2015</b> , 51, 16683-6	296
1921	Phosphorus-doped CoS <sub>2</sub> nanosheet arrays as ultra-efficient electrocatalysts for the hydrogen evolution reaction. <b>2015</b> , 51, 14160-3	202
1920	Pore-size dependent THz absorption of nano-confined water. <b>2015</b> , 40, 2731-4	9

1919	Tetrahedral Silsesquioxane Framework: A Feasible Candidate for Hydrogen Storage. <b>2015</b> , 119, 23820-23829	9
1918	A Bi <sub>2</sub> Te <sub>3</sub> @CoNiMo composite as a high performance bifunctional catalyst for hydrogen and oxygen evolution reactions. <b>2015</b> , 3, 22770-22780	31
1917	Modeling the effect of non-ideal flow pattern on tertiary current distribution in a filter-press-type electrochemical reactor for copper recovery. <b>2015</b> , 100, 422-433	25
1916	Oxygen Evolution Reaction Electrocatalysis on Transition Metal Oxides and (Oxy)hydroxides: Activity Trends and Design Principles. <b>2015</b> , 27, 7549-7558	747
1915	Hybrid bioinorganic approach to solar-to-chemical conversion. <b>2015</b> , 112, 11461-6	174
1914	Self-supported NiMo hollow nanorod array: an efficient 3D bifunctional catalytic electrode for overall water splitting. <b>2015</b> , 3, 20056-20059	189
1913	A first-principles study on the hydrogen evolution reaction of VS <sub>2</sub> nanoribbons. <b>2015</b> , 17, 24820-5	77
1912	Advanced and In Situ Analytical Methods for Solar Fuel Materials. <b>2016</b> , 371, 253-324	2
1911	Electrocatalytic hydrogen evolution reaction with metallophthalocyanines modified with click electrochemistry. <b>2015</b> , 40, 12973-12984	29
1910	Study on the characteristics of hydrogen bubble formation and its transport during electrolysis of water. <b>2015</b> , 138, 99-109	41
1909	A porous proton-relaying metal-organic framework material that accelerates electrochemical hydrogen evolution. <b>2015</b> , 6, 8304	194
1908	Ni <sub>3</sub> Se <sub>2</sub> film as a non-precious metal bifunctional electrocatalyst for efficient water splitting. <b>2015</b> , 5, 4954-4958	117
1907	NiCo <sub>2</sub> S <sub>4</sub> nanowires array as an efficient bifunctional electrocatalyst for full water splitting with superior activity. <b>2015</b> , 7, 15122-6	319
1906	Performance evaluation of a membraneless divergent electrode-flow-through (DEFT) alkaline electrolyser based on optimisation of electrolytic flow and electrode gap. <b>2015</b> , 293, 228-235	38
1905	Pyrochlore electrocatalysts for efficient alkaline water electrolysis. <b>2015</b> , 3, 10819-10828	80
1904	Electrodeposition of nickel phosphorus nanoparticles film as a Janus electrocatalyst for electro-splitting of water. <b>2015</b> , 299, 342-346	101
1903	Electrocatalytic Hydrogen Evolution under Densely Buffered Neutral pH Conditions. <b>2015</b> , 119, 20453-20458	53
1902	Batteries. Opening the window for aqueous electrolytes. <b>2015</b> , 350, 918	56

1901	Hydrogen the future transportation fuel: From production to applications. <b>2015</b> , 43, 1151-1158	481
1900	Economic Production of H <sub>2</sub> -Based Clean Energy by Regenerating Desulfurization Residuals in an Electromembrane Reactor. <b>2015</b> , 54, 386-395	1
1899	Diethylenetriamine (DETA)-assisted anchoring of Co <sub>3</sub> O <sub>4</sub> nanorods on carbon nanotubes as efficient electrocatalysts for the oxygen evolution reaction. <b>2015</b> , 3, 1761-1768	65
1898	NiCo electrodes prepared by electroless-plating deposition. A study of their electrocatalytic activity for the hydrogen and oxygen evolution reactions. <b>2015</b> , 40, 51-61	62
1897	Enhanced photocatalytic H <sub>2</sub> production activity of bicomponent NiO/TiO <sub>2</sub> composite nanofibers. <b>2015</b> , 449, 115-21	116
1896	A mini review of NiFe-based materials as highly active oxygen evolution reaction electrocatalysts. <b>2015</b> , 8, 23-39	984
1895	Integrated inorganic membrane electrode assembly with layered double hydroxides as ionic conductors for anion exchange membrane water electrolysis. <b>2015</b> , 11, 110-118	45
1894	Co <sub>3</sub> S <sub>4</sub> /NCNTs: A catalyst for oxygen evolution reaction. <b>2015</b> , 245, 74-78	55
1893	A general framework for the assessment of solar fuel technologies. <b>2015</b> , 8, 126-157	242
1892	Power-to-Gas. <b>2016</b> , 373-389	2
1891	Mixed-Metal Semiconductor Anodes for Electrochemical Water Splitting and Reactive Chlorine Species Generation: Implications for Electrochemical Wastewater Treatment. <b>2016</b> , 6, 59	11
1890	N-Doped graphene-supported Co@CoO core-shell nanoparticles as high-performance bifunctional electrocatalysts for overall water splitting. <b>2016</b> , 4, 12046-12053	84
1889	Layer-by-layer assembly of exfoliated layered double hydroxide nanosheets for enhanced electrochemical oxidation of water. <b>2016</b> , 4, 11516-11523	83
1888	Electrochemical conversion of alcohols for hydrogen production: a short overview. <b>2016</b> , 5, 388-400	62
1887	Chemical looping syngas from CO <sub>2</sub> and H <sub>2</sub> O over manganese oxide minerals. <b>2016</b> , 94, 703-712	11
1886	Hierarchical NiCo <sub>2</sub> S <sub>4</sub> Nanowire Arrays Supported on Ni Foam: An Efficient and Durable Bifunctional Electrocatalyst for Oxygen and Hydrogen Evolution Reactions. <b>2016</b> , 26, 4661-4672	943
1885	A Perovskite Electrocatalyst for Efficient Hydrogen Evolution Reaction. <b>2016</b> , 28, 6442-8	315
1884	Two-Dimensional, Few-Layer Phosphochalcogenide, FePS <sub>3</sub> : A New Catalyst for Electrochemical Hydrogen Evolution over Wide pH Range. <b>2016</b> , 1, 367-372	142

1883	Status and Prospects of Alkaline Electrolysis. <b>2016</b> , 283-308	1
1882	The goldilocks electrolyte: examining the performance of iron/nickel oxide thin films as catalysts for electrochemical water splitting in various aqueous NaOH solutions. <b>2016</b> , 4, 11397-11407	39
1881	Perovskite as a Cathode Material: A Review of its Role in Solid-Oxide Fuel Cell Technology. <b>2016</b> , 3, 511-530	138
1880	A Mechanism for Highly Efficient Electrochemical Bubbling Delamination of CVD-Grown Graphene from Metal Substrates. <b>2016</b> , 3, 1500492	28
1879	The 2016 Thermal Spray Roadmap. <b>2016</b> , 25, 1376-1440	165
1878	The Behaviour of Gas Bubble during Rest Period of Pulse-Activated Electrolysis Hydrogen Production. <b>2016</b> , 77, 14001	2
1877	Assessment of an integrated energy system embedded with power-to-gas plant. <b>2016</b> ,	10
1876	Biohydrogen Production from Hydrolysates of Selected Tropical Biomass Wastes with <i>Clostridium Butyricum</i> . <b>2016</b> , 6, 27205	26
1875	One-Step Synthesis of a Self-Supported Copper Phosphide Nanobush for Overall Water Splitting. <b>2016</b> , 1, 1367-1373	73
1874	Engineered Three-Dimensional Electrodes by HVOF Process for Hydrogen Production. <b>2016</b> , 25, 1561-1569	2
1873	Two-dimensional boron: Lightest catalyst for hydrogen and oxygen evolution reaction. <b>2016</b> , 109, 053903	71
1872	Optimization of the Nickel Square Wave Treatment to Produce Highly Active Bifunctional Alkaline Hydrogen Evolution Catalysts. <b>2016</b> , 163, F3146-F3152	1
1871	Development of a novel miniature detonation-driven shock tube assembly that uses in situ generated oxyhydrogen mixture. <b>2016</b> , 87, 085114	9
1870	Comparison of Alternative Molten Electrolytes for Water Splitting to Generate Hydrogen Fuel. <b>2016</b> , 163, F1162-F1168	13
1869	Zero-Gap Alkaline Water Electrolysis Using Ion-Solvating Polymer Electrolyte Membranes at Reduced KOH Concentrations. <b>2016</b> , 163, F3125-F3131	60
1868	Solar Electricity and Solar Fuels: Status and Perspectives in the Context of the Energy Transition. <b>2016</b> , 22, 32-57	239
1867	Low-Overpotential High-Activity Mixed Manganese and Ruthenium Oxide Electrocatalysts for Oxygen Evolution Reaction in Alkaline Media. <b>2016</b> , 6, 2408-2415	113
1866	Operation of an inexpensive bipolar alkaline electrolyser producing a mix of H <sub>2</sub> /O <sub>2</sub> fuel. <b>2016</b> , 41, 2197-2201	3

1865	Fiber-based multifunctional nickel phosphide electrodes for flexible energy conversion and storage. <b>2016</b> , 4, 9691-9699	116
1864	Er <sup>3+</sup> , Yb <sup>3+</sup> doping induced core-shell structured BiVO <sub>4</sub> and near-infrared photocatalytic properties. <b>2016</b> , 416, 1-9	51
1863	Efficient electrochemical water splitting catalyzed by electrodeposited NiFe nanosheets film. <b>2016</b> , 41, 8785-8792	46
1862	Modeling of solar photovoltaic-polymer electrolyte membrane electrolyzer direct coupling for hydrogen generation. <b>2016</b> , 41, 10120-10135	22
1861	Controllable synthesis of three dimensional electrodeposited CoP nanosphere arrays as efficient electrocatalysts for overall water splitting. <b>2016</b> , 6, 52761-52771	42
1860	Study of the catalytic activity of 3D macroporous Ni and NiMo cathodes for hydrogen production by alkaline water electrolysis. <b>2016</b> , 46, 791-803	33
1859	Mass transport aspects of electrochemical solar-hydrogen generation. <b>2016</b> , 9, 1533-1551	64
1858	Modeling microalgae derived hydrogen production enhancement via genetic modification. <b>2016</b> , 41, 8101-8110	7
1857	The activity of nanocrystalline Fe-based alloys as electrode materials for the hydrogen evolution reaction. <b>2016</b> , 304, 196-206	23
1856	Role of critical metals in the future markets of clean energy technologies. <b>2016</b> , 95, 53-62	132
1855	Co nanoparticles embedded in a 3D CoO matrix for electrocatalytic hydrogen evolution. <b>2016</b> , 6, 38515-38520	15
1854	One-step electrodeposition of NiCoS nanosheets film as a bifunctional electrocatalyst for efficient water splitting. <b>2016</b> , 41, 7264-7269	88
1853	Suitable alkaline for graphene peeling grown on metallic catalysts using chemical vapor deposition. <b>2016</b> , 368, 157-164	5
1852	Highly Efficient and Robust Nickel Phosphides as Bifunctional Electrocatalysts for Overall Water-Splitting. <b>2016</b> , 8, 10826-34	162
1851	Vanadium nanobelts coated nickel foam 3D bifunctional electrode with excellent catalytic activity and stability for water electrolysis. <b>2016</b> , 8, 10731-8	62
1850	A self-standing nanoporous MoP <sub>2</sub> nanosheet array: an advanced pH-universal catalytic electrode for the hydrogen evolution reaction. <b>2016</b> , 4, 7169-7173	165
1849	Monolithic-structured ternary hydroxides as freestanding bifunctional electrocatalysts for overall water splitting. <b>2016</b> , 4, 7245-7250	135
1848	The Oxygen Evolution Reaction: Mechanistic Concepts and Catalyst Design. <b>2016</b> , 41-104	58

1847	Evaluation and optimization of the alkaline water electrolysis ohmic polarization: Exergy study. <b>2016</b> , 41, 7253-7263	21
1846	An efficient bifunctional electrocatalyst for water splitting based on cobalt phosphide. <b>2016</b> , 27, 23LT01	43
1845	An efficient bifunctional two-component catalyst for oxygen reduction and oxygen evolution in reversible fuel cells, electrolyzers and rechargeable air electrodes. <b>2016</b> , 9, 2020-2024	179
1844	Salinity gradient power-reverse electrodialysis and alkaline polymer electrolyte water electrolysis for hydrogen production. <b>2016</b> , 514, 155-164	50
1843	Improvement on efficiencies of water electrolyzer using packed-bed electrodes. <b>2016</b> , 41, 10292-10298	4
1842	Study of fluorine doped (Nb,Ir)O <sub>2</sub> solid solution electro-catalyst powders for proton exchange membrane based oxygen evolution reaction. <b>2016</b> , 212, 101-108	15
1841	Design and Manufacture of ICE Test Module to Reduce Gasoline Consumption Using Oxyhydrogen Gas from an Alkaline Electrolyzer. <b>2016</b> , 30, 6640-6645	4
1840	Ultrafine Co <sub>2</sub> P nanoparticles encapsulated in nitrogen and phosphorus dual-doped porous carbon nanosheet/carbon nanotube hybrids: high-performance bifunctional electrocatalysts for overall water splitting. <b>2016</b> , 4, 15501-15510	75
1839	Acidic or Alkaline? Towards a New Perspective on the Efficiency of Water Electrolysis. <b>2016</b> , 163, F3197-F3208	145
1838	Synthesis and characterization of Ni-P-Ag composite coating as efficient electrocatalyst for alkaline hydrogen evolution reaction. <b>2016</b> , 219, 377-385	23
1837	New Insight into the Hydrogen Evolution Reaction under Buffered Near-Neutral pH Conditions: Enthalpy and Entropy of Activation. <b>2016</b> , 120, 24187-24196	31
1836	MoS <sub>2</sub> nanosheet decorated with trace loads of Pt as highly active electrocatalyst for hydrogen evolution reaction. <b>2016</b> , 219, 187-193	52
1835	Encyclopedia of Membranes. <b>2016</b> , 937-939	
1834	Study on Separator for Alkaline Water Electrolysis. <b>2016</b> , 163, F3139-F3145	6
1833	Alkaline Water Electrolysis. <b>2016</b> , 137-142	2
1832	Toward Enhanced Oxygen Evolution on Perovskite Oxides Synthesized from Different Approaches: A Case Study of Ba <sub>0.5</sub> Sr <sub>0.5</sub> Co <sub>0.8</sub> Fe <sub>0.2</sub> O <sub>3</sub> . <b>2016</b> , 219, 553-559	57
1831	Highly active nickel-cobalt/nanocarbon thin films as efficient water splitting electrodes. <b>2016</b> , 8, 18507-18515	47
1830	Recent progress on earth abundant hydrogen evolution reaction and oxygen evolution reaction bifunctional electrocatalyst for overall water splitting in alkaline media. <b>2016</b> , 333, 213-236	299

1829	Mechanistic Insights on Ternary Ni <sub>2</sub> Co <sub>x</sub> P for Hydrogen Evolution and Their Hybrids with Graphene as Highly Efficient and Robust Catalysts for Overall Water Splitting. <b>2016</b> , 26, 6785-6796	422
1828	Power-to-Fuel and Artificial Photosynthesis for Chemical Energy Storage. <b>2016</b> , 493-566	
1827	Aerophilic Electrode with Cone Shape for Continuous Generation and Efficient Collection of H <sub>2</sub> Bubbles. <b>2016</b> , 26, 6830-6835	48
1826	Recent developments of carbon-based electrocatalysts for hydrogen evolution reaction. <b>2016</b> , 28, 29-43	473
1825	Influence of the main gasifier parameters on a real system for hydrogen production from biomass. <b>2016</b> , 41, 11965-11973	31
1824	Two-step synthesis of binary NiBe sulfides supported on nickel foam as highly efficient electrocatalysts for the oxygen evolution reaction. <b>2016</b> , 4, 13499-13508	189
1823	Bipolar Electrochemistry for Concurrently Evaluating the Stability of Anode and Cathode Electrocatalysts and the Overall Cell Performance during Long-Term Water Electrolysis. <b>2016</b> , 88, 8835-40	21
1822	Modellierung, Simulation und Implementierung von Zellen für die solarbetriebene Wasserspaltung. <b>2016</b> , 128, 13168-13183	7
1821	High-Sulfur-Vacancy Amorphous Molybdenum Sulfide as a High Current Electrocatalyst in Hydrogen Evolution. <b>2016</b> , 12, 5530-5537	138
1820	Cobalt and nickel selenide nanowalls anchored on graphene as bifunctional electrocatalysts for overall water splitting. <b>2016</b> , 4, 14789-14795	115
1819	Enhancement of oxygen evolution performance through synergetic action between NiFe metal core and NiFeO shell. <b>2016</b> , 52, 11803-11806	34
1818	Iron-Nickel Nitride Nanostructures in Situ Grown on Surface-Redox-Etching Nickel Foam: Efficient and Ultrasustainable Electrocatalysts for Overall Water Splitting. <b>2016</b> , 28, 6934-6941	367
1817	Electroactivity of NiBe cathodes in alkaline water electrolysis and effect of corrosion. <b>2016</b> , 112, 255-263	10
1816	Thermally Prepared Mn <sub>2</sub> O <sub>3</sub> /RuO <sub>2</sub> /Ru Thin Films as Highly Active Catalysts for the Oxygen Evolution Reaction in Alkaline Media. <b>2016</b> , 3, 1847-1855	17
1815	Coated Stainless Steel Bipolar Plates for Proton Exchange Membrane Electrolyzers. <b>2016</b> , 163, F3119-F3124	31
1814	High steam utilization operation with high current density in solid oxide electrolysis cells. <b>2016</b> , 124, 213-217	4
1813	Phase and Interface Engineering of Platinum-Nickel Nanowires for Efficient Electrochemical Hydrogen Evolution. <b>2016</b> , 55, 12859-63	247
1812	Stability of ceramic materials for H <sub>2</sub> transport membranes in gasification environment under the influence of gas contaminants. <b>2016</b> , 36, 3457-3464	12

1811	Phase and Interface Engineering of Platinum-Nickel Nanowires for Efficient Electrochemical Hydrogen Evolution. <b>2016</b> , 128, 13051-13055	60
1810	Cathodes for microbial fuel cells. <b>2016</b> , 179-213	7
1809	Electrochemical fabrication of porous Ni-Cu alloy nanosheets with high catalytic activity for hydrogen evolution. <b>2016</b> , 215, 609-616	87
1808	Modeling, Simulation, and Implementation of Solar-Driven Water-Splitting Devices. <b>2016</b> , 55, 12974-12988	86
1807	Energy and the Environment. <b>2016</b> , 363-452	9
1806	Engineering water dissociation sites in MoS <sub>2</sub> nanosheets for accelerated electrocatalytic hydrogen production. <b>2016</b> , 9, 2789-2793	386
1805	Plasma carburizing for improvement of Ni-Fe cathodes for alkaline water electrolysis. <b>2016</b> , 220, 11-19	8
1804	Separating hydrogen and oxygen evolution in alkaline water electrolysis using nickel hydroxide. <b>2016</b> , 7, 11741	232
1803	Electrochemical analysis of nanostructured iron oxides using cyclic voltammetry and scanning electrochemical microscopy. <b>2016</b> , 222, 1326-1334	14
1802	Low Overpotential Water Splitting Using Cobalt-Cobalt Phosphide Nanoparticles Supported on Nickel Foam. <b>2016</b> , 1, 1192-1198	111
1801	A miniature solar device for overall water splitting consisting of series-connected spherical silicon solar cells. <b>2016</b> , 6, 24633	22
1800	Cobalt phosphide nanowall arrays supported on carbon cloth: an efficient monolithic non-noble-metal hydrogen evolution catalyst. <b>2016</b> , 27, 475702	17
1799	Zero gap alkaline electrolysis cell design for renewable energy storage as hydrogen gas. <b>2016</b> , 6, 100643-100651	96
1798	Ammonia intercalated flower-like MoS <sub>2</sub> nanosheet film as electrocatalyst for high efficient and stable hydrogen evolution. <b>2016</b> , 6, 31092	66
1797	Single-Step Synthesis of WC Nanoparticle-Dispersed Carbon Electrocatalysts for Hydrogen Evolution Reactions Utilizing Phosphate Groups on Carbon Edge Sites. <b>2016</b> , 1, 689-695	21
1796	Hollow Chevrel-Phase NiMo <sub>3</sub> S <sub>4</sub> for Hydrogen Evolution in Alkaline Electrolytes. <b>2016</b> , 128, 15466-15471	44
1795	Hollow Chevrel-Phase NiMo S for Hydrogen Evolution in Alkaline Electrolytes. <b>2016</b> , 55, 15240-15245	119
1794	Water Splitting on Transition Metal Active Sites at TiO <sub>2</sub> -Based Electrodes: A Small Cluster Study. <b>2016</b> , 120, 25851-25860	12

1793	Recent Progress in Cobalt-Based Heterogeneous Catalysts for Electrochemical Water Splitting. <b>2016</b> , 28, 215-30	1708
1792	Perovskite materials in energy storage and conversion. <b>2016</b> , 11, 338-369	59
1791	Dynamic Operation of Electrolyzers Systems Design and Operating Strategies. <b>2016</b> , 309-330	2
1790	Amorphous Cobalt Boride (Co <sub>2</sub> B) as a Highly Efficient Nonprecious Catalyst for Electrochemical Water Splitting: Oxygen and Hydrogen Evolution. <b>2016</b> , 6, 1502313	539
1789	Interface Engineering of MoS <sub>2</sub> /Ni <sub>3</sub> S <sub>2</sub> Heterostructures for Highly Enhanced Electrochemical Overall-Water-Splitting Activity. <b>2016</b> , 55, 6702-7	896
1788	EU scenarios of renewable coal hydro-gasification for SNG production. <b>2016</b> , 16, 43-52	7
1787	Interconnected urchin-like cobalt phosphide microspheres film for highly efficient electrochemical hydrogen evolution in both acidic and basic media. <b>2016</b> , 4, 10114-10117	92
1786	Three-dimensional electrode coatings for hydrogen production manufactured by combined atmospheric and suspension plasma spray. <b>2016</b> , 291, 348-355	7
1785	Production of Ni(OH) <sub>2</sub> nanosheets by liquid phase exfoliation: from optical properties to electrochemical applications. <b>2016</b> , 4, 11046-11059	60
1784	Energy and economic analyses of models developed for sustainable hydrogen production from biogas-based electricity and sewage sludge. <b>2016</b> , 41, 13426-13435	21
1783	A novel approach for the preparation of NiTeO <sub>2</sub> composite cathodes with enhanced electrocatalytic activity. <b>2016</b> , 6, 60806-60814	17
1782	Novel one-step synthesis of wool-ball-like Ni-carbon nanotubes composite cathodes with favorable electrocatalytic activity for hydrogen evolution reaction in alkaline solution. <b>2016</b> , 324, 86-96	50
1781	Durable Membrane Electrode Assemblies for Proton Exchange Membrane Electrolyzer Systems Operating at High Current Densities. <b>2016</b> , 210, 502-511	67
1780	Stability of 3D-porous Ni/Cu cathodes under real alkaline electrolyzer operating conditions and its effect on catalytic activity. <b>2016</b> , 198, 142-153	6
1779	Manufacturing of a LaNiO <sub>3</sub> composite electrode for oxygen evolution in commercial alkaline water electrolysis. <b>2016</b> , 41, 10152-10160	22
1778	Deactivation Mechanisms of Atmospheric Plasma Spraying Raney Nickel Electrodes. <b>2016</b> , 163, F308-F317	10
1777	Nanoparticle-Stacked Porous Nickel-Iron Nitride Nanosheet: A Highly Efficient Bifunctional Electrocatalyst for Overall Water Splitting. <b>2016</b> , 8, 18652-7	222
1776	Self-standing Ni-WN heterostructure nanowires array: A highly efficient catalytic cathode for hydrogen evolution reaction in alkaline solution. <b>2016</b> , 210, 729-733	47

1775	Interplay of the Open Circuit Potential-Relaxation and the Dissolution Behavior of a Single H <sub>2</sub> Bubble Generated at a Pt Microelectrode. <b>2016</b> , 120, 15137-15146	7
1774	A novel Ni-Schiff base complex derived electrocatalyst for oxygen evolution reaction. <b>2016</b> , 20, 2737-2747	6
1773	Interface Engineering of MoS <sub>2</sub> /Ni <sub>3</sub> S <sub>2</sub> Heterostructures for Highly Enhanced Electrochemical Overall-Water-Splitting Activity. <b>2016</b> , 128, 6814-6819	315
1772	Temperature Dependence of Electrocatalytic and Photocatalytic Oxygen Evolution Reaction Rates Using NiFe Oxide. <b>2016</b> , 6, 1713-1722	106
1771	NiMoB alloys as cathode material for alkaline water electrolysis. <b>2016</b> , 41, 2165-2176	30
1770	Kinetics of hydrogen evolution reaction on nickel modified by spontaneous Ru deposition: A rotating disk electrode and impedance spectroscopy approach. <b>2016</b> , 41, 3326-3338	26
1769	The effect of graphene for the hydrogen evolution reaction in alkaline medium. <b>2016</b> , 41, 3786-3793	43
1768	Efficient Electrochemical Water Splitting Catalyzed by Electrodeposited Nickel Diselenide Nanoparticles Based Film. <b>2016</b> , 8, 4718-23	207
1767	RETRACTED: A review of solar based hydrogen production methods. <b>2016</b> , 56, 171-178	103
1766	Thickness Dependence and Percolation Scaling of Hydrogen Production Rate in MoS <sub>2</sub> Nanosheet and Nanosheet-Carbon Nanotube Composite Catalytic Electrodes. <b>2016</b> , 10, 672-83	101
1765	Toward the Development and Deployment of Large-Scale Carbon Dioxide Capture and Conversion Processes. <b>2016</b> , 55, 3383-3419	145
1764	Platinum-like oxidation of nickel surfaces by rapidly switching voltage to generate highly active bifunctional catalysts. <b>2016</b> , 67, 22-25	4
1763	Performance of stainless steel 316L electrodes with modified surface to be use in alkaline water electrolyzers. <b>2016</b> , 41, 9731-9737	20
1762	Electrochemically activated-iron oxide nanosheet arrays on carbon fiber cloth as a three-dimensional self-supported electrode for efficient water oxidation. <b>2016</b> , 4, 6048-6055	54
1761	The Mechanism of Alternating Current Corrosion of API Grade X65 Pipeline Steel. <b>2016</b> , 72, 1196-1210	16
1760	Insight of anode reaction for CWS (coal water slurry) electrolysis for hydrogen production. <b>2016</b> , 96, 372-382	26
1759	Interfacial effects on the catalysis of the hydrogen evolution, oxygen evolution and CO <sub>2</sub> -reduction reactions for (co-)electrolyzer development. <b>2016</b> , 29, 4-28	82
1758	Electrocatalytic hydrogen evolution reaction on reduced graphene oxide electrode decorated with cobaltphthalocyanine. <b>2016</b> , 188, 217-226	61

1757	Comparison of liquid exfoliated transition metal dichalcogenides reveals MoSe <sub>2</sub> to be the most effective hydrogen evolution catalyst. <b>2016</b> , 8, 5737-49	100
1756	Electrolyte Engineering toward Efficient Hydrogen Production Electrocatalysis with Oxygen-Crossover Regulation under Densely Buffered Near-Neutral pH Conditions. <b>2016</b> , 120, 1785-1794	22
1755	Cathode bubbles induced by moisture electrolysis in TiO <sub>2</sub> -based resistive switching cells. <b>2016</b> , 49, 09LT01	4
1754	Electrodeposited Co-doped NiSe <sub>2</sub> nanoparticles film: a good electrocatalyst for efficient water splitting. <b>2016</b> , 8, 3911-5	299
1753	Highly-active oxygen evolution electrocatalyzed by a Fe-doped NiSe nanoflake array electrode. <b>2016</b> , 52, 4529-32	105
1752	Alkali doped poly (2,5-benzimidazole) membrane for alkaline water electrolysis: Characterization and performance. <b>2016</b> , 312, 128-136	36
1751	Amorphous Ni-B alloy nanoparticle film on Ni foam: rapid alternately dipping deposition for efficient overall water splitting. <b>2016</b> , 27, 12LT01	73
1750	Hydrogen generation promoted by photocatalytic oxidation of ascorbate and glucose at a cadmium sulfide electrode. <b>2016</b> , 198, 40-48	15
1749	Ion-exchange membranes in chemical synthesis <b>a</b> review. <b>2016</b> , 14, 1-19	35
1748	Zn <sub>0.76</sub> Co <sub>0.24</sub> S/CoS <sub>2</sub> nanowires array for efficient electrochemical splitting of water. <b>2016</b> , 190, 360-364	83
1747	Comparative energetic assessment of methanol production from CO <sub>2</sub> : Chemical versus electrochemical process. <b>2016</b> , 165, 1-13	58
1746	Fabrication of nickel electrode coatings by combination of atmospheric and suspension plasma spray processes. <b>2016</b> , 285, 68-76	12
1745	Design, fabrication, and characterization of a proposed microchannel water electrolyzer. <b>2016</b> , 307, 122-128	10
1744	Thermogravimetric analysis of hydrogen production of AlMgNi particles and water. <b>2016</b> , 41, 7927-7934	9
1743	Maghemite nanorods anchored on a 3D nitrogen-doped carbon nanotubes substrate as scalable direct electrode for water oxidation. <b>2016</b> , 41, 69-78	17
1742	A mini review on nickel-based electrocatalysts for alkaline hydrogen evolution reaction. <b>2016</b> , 9, 28-46	568
1741	Comprehensive energy analysis of a photovoltaic thermal water electrolyzer. <b>2016</b> , 164, 294-302	30
1740	A numerical study of the gas-liquid, two-phase flow maldistribution in the anode of a high pressure PEM water electrolysis cell. <b>2016</b> , 41, 52-68	48

1739	Micro/small wind turbine power control for electrolysis applications. <b>2016</b> , 87, 182-192	10
1738	pH dependence of OER activity of oxides: Current and future perspectives. <b>2016</b> , 262, 2-10	179
1737	Cold spray as a novel method for development of nickel electrode coatings for hydrogen production. <b>2016</b> , 41, 227-238	12
1736	Rational composition and structural design of in situ grown nickel-based electrocatalysts for efficient water electrolysis. <b>2016</b> , 4, 167-172	120
1735	Nickel sulfide microsphere film on Ni foam as an efficient bifunctional electrocatalyst for overall water splitting. <b>2016</b> , 52, 1486-9	402
1734	Nickel promoted cobalt disulfide nanowire array supported on carbon cloth: An efficient and stable bifunctional electrocatalyst for full water splitting. <b>2016</b> , 63, 60-64	125
1733	Direct propanol synthesis from CO <sub>2</sub> , C <sub>2</sub> H <sub>4</sub> , and H <sub>2</sub> over CsAu/TiO <sub>2</sub> rutile: effect of promoter loading, temperature and feed composition. <b>2016</b> , 6, 2171-2180	13
1732	Transition metal based layered double hydroxides tailored for energy conversion and storage. <b>2016</b> , 19, 213-226	344
1731	Design of an artificial photosynthetic system for production of alcohols in high concentration from CO <sub>2</sub> . <b>2016</b> , 9, 193-199	41
1730	Anion exchange membrane water electrolyzer with an ultra-low loading of Pt-decorated Ni electrocatalyst. <b>2016</b> , 180, 674-679	36
1729	A novel water-splitting electrochemical cycle for hydrogen production using an intermediate electrode. <b>2017</b> , 157, 200-208	14
1728	Flexible cobalt phosphide network electrocatalyst for hydrogen evolution at all pH values. <b>2017</b> , 10, 1010-1020	63
1727	Replacing Oxygen Evolution with Hydrazine Oxidation at the Anode for Energy-Saving Electrolytic Hydrogen Production. <b>2017</b> , 4, 481-484	49
1726	Fe-Doped NiP Nanosheet Array for High-Efficiency Electrochemical Water Oxidation. <b>2017</b> , 56, 1041-1044	164
1725	Facile Synthesis of Vanadium-Doped NiS Nanowire Arrays as Active Electrocatalyst for Hydrogen Evolution Reaction. <b>2017</b> , 9, 5959-5967	138
1724	Graphene-coated hybrid electrocatalysts derived from bimetallic metal-organic frameworks for efficient hydrogen generation. <b>2017</b> , 5, 5000-5006	62
1723	Ni-reduced graphene oxide composite cathodes with new hierarchical morphologies for electrocatalytic hydrogen generation in alkaline media. <b>2017</b> , 7, 704-711	14
1722	Controllable synthesis of molybdenum-based electrocatalysts for a hydrogen evolution reaction. <b>2017</b> , 5, 4879-4885	75

1721	Influence of process conditions on gas purity in alkaline water electrolysis. <b>2017</b> , 42, 9406-9418	51
1720	Electrocatalysis for the oxygen evolution reaction: recent development and future perspectives. <b>2017</b> , 46, 337-365	3041
1719	Energy Recovery from Organic Waste. <b>2017</b> , 545-572	0
1718	High-performance urea electrolysis towards less energy-intensive electrochemical hydrogen production using a bifunctional catalyst electrode. <b>2017</b> , 5, 3208-3213	211
1717	Non-Noble Metal-based Carbon Composites in Hydrogen Evolution Reaction: Fundamentals to Applications. <b>2017</b> , 29, 1605838	900
1716	Silicone Nanofilament-Supported Mixed Nickel-Metal Oxides for Alkaline Water Electrolysis. <b>2017</b> , 164, F203-F208	7
1715	An efficient ternary CoPSe nanowire array for overall water splitting. <b>2017</b> , 9, 3995-4001	63
1714	Facile electrochemical preparation of self-supported porous NiMo alloy microsphere films as efficient bifunctional electrocatalysts for water splitting. <b>2017</b> , 5, 5797-5805	91
1713	NiS <sub>2</sub> nanosheet array: A high-active bifunctional electrocatalyst for hydrazine oxidation and water reduction toward energy-efficient hydrogen production. <b>2017</b> , 3, 9-14	47
1712	Graphene and Their Hybrid Electrocatalysts for Water Splitting. <b>2017</b> , 9, 1554-1568	58
1711	Synthesis, characterization and visible-light-driven photoelectrochemical hydrogen evolution reaction of carbazole-containing conjugated polymers. <b>2017</b> , 42, 10952-10961	58
1710	Al-Doped CoP nanoarray: a durable water-splitting electrocatalyst with superhigh activity. <b>2017</b> , 9, 4793-4800	200
1709	Ultrashort pulse laser-structured nickel surfaces as hydrogen evolution electrodes for alkaline water electrolysis. <b>2017</b> , 42, 10826-10833	22
1708	Precise tuning in platinum-nickel/nickel sulfide interface nanowires for synergistic hydrogen evolution catalysis. <b>2017</b> , 8, 14580	503
1707	Degradation in photoelectrochemical devices: review with an illustrative case study. <b>2017</b> , 50, 124002	49
1706	Hexagonal Arrays of Cylindrical Nickel Microstructures for Improved Oxygen Evolution Reaction. <b>2017</b> , 9, 7036-7043	15
1705	Design and Application of Foams for Electrocatalysis. <b>2017</b> , 9, 1721-1743	202
1704	Solution combustion synthesis of highly dispersible and dispersed iridium oxide as an anode catalyst in PEM water electrolysis. <b>2017</b> , 5, 4774-4778	32

1703	A Heterostructure Coupling of Exfoliated Ni-Fe Hydroxide Nanosheet and Defective Graphene as a Bifunctional Electrocatalyst for Overall Water Splitting. <b>2017</b> , 29, 1700017	651
1702	Deconvoluting the influences of 3D structure on the performance of photoelectrodes for solar-driven water splitting. <b>2017</b> , 1, 154-173	15
1701	Economic evaluation with sensitivity and profitability analysis for hydrogen production from water electrolysis in Korea. <b>2017</b> , 42, 6462-6471	77
1700	Electrochemical Hydrogen Evolution at Ordered Mo <sub>7</sub> Ni <sub>7</sub> . <b>2017</b> , 7, 3375-3383	44
1699	Comprehensive Study of the Electrodeposition of Nickel Nanostructures from Deep Eutectic Solvents: Self-Limiting Growth by Electrolysis of Residual Water. <b>2017</b> , 121, 9337-9347	60
1698	Experimental studies and modeling of advanced alkaline water electrolyser with porous nickel electrodes for hydrogen production. <b>2017</b> , 42, 12094-12103	27
1697	Evaluation of flow schemes for near-neutral pH electrolytes in solar-fuel generators. <b>2017</b> , 1, 458-466	17
1696	Alkali-doped polyvinyl alcohol [Polybenzimidazole membranes for alkaline water electrolysis. <b>2017</b> , 535, 45-55	30
1695	Influence of Ni to Co ratio in mixed Co and Ni phosphides on their electrocatalytic oxygen evolution activity. <b>2017</b> , 79, 41-45	22
1694	CoNiSe as an efficient bifunctional electrocatalyst for overall water splitting. <b>2017</b> , 53, 5412-5415	68
1693	Bimetallic Nickel-Substituted Cobalt-Borate Nanowire Array: An Earth-Abundant Water Oxidation Electrocatalyst with Superior Activity and Durability at Near Neutral pH. <b>2017</b> , 13, 1700394	84
1692	Constructing three-dimensional porous Ni/NiS nano-interfaces for hydrogen evolution electrocatalysis under alkaline conditions. <b>2017</b> , 46, 10700-10706	32
1691	Nickel nanocones as efficient and stable catalyst for electrochemical hydrogen evolution reaction. <b>2017</b> , 42, 14560-14565	62
1690	Effect of Magnetic Field on HER of Water Electrolysis on Ni <sub>2</sub> W Alloy. <b>2017</b> , 8, 375-382	37
1689	Mechanistic insight into oxygen evolution electrocatalysis of surface phosphate modified cobalt phosphide nanorod bundles and their superior performance for overall water splitting. <b>2017</b> , 242, 355-363	96
1688	Anodically Grown Binder-Free Nickel Hexacyanoferrate Film: Toward Efficient Water Reduction and Hexacyanoferrate Film Based Full Device for Overall Water Splitting. <b>2017</b> , 9, 18015-18021	43
1687	Ultrathin High Surface Area Nickel Boride (Ni <sub>3</sub> B) Nanosheets as Highly Efficient Electrocatalyst for Oxygen Evolution. <b>2017</b> , 7, 1700381	245
1686	A porous Ni <sub>3</sub> N nanosheet array as a high-performance non-noble-metal catalyst for urea-assisted electrochemical hydrogen production. <b>2017</b> , 4, 1120-1124	183

1685	Hydrazine-assisted electrolytic hydrogen production: CoS <sub>2</sub> nanoarray as a superior bifunctional electrocatalyst. <b>2017</b> , 41, 4754-4757	55
1684	Techno-economic assessment of hydrogen production based on dual fluidized bed biomass steam gasification, biogas steam reforming, and alkaline water electrolysis processes. <b>2017</b> , 145, 278-292	52
1683	Amorphous nickel-cobalt complexes hybridized with 1T-phase molybdenum disulfide via hydrazine-induced phase transformation for water splitting. <b>2017</b> , 8, 15377	219
1682	In Situ Transformation of MOFs into Layered Double Hydroxide Embedded Metal Sulfides for Improved Electrocatalytic and Supercapacitive Performance. <b>2017</b> , 29, 1606814	365
1681	Energy, exergy and economic analyses of a novel system to recover waste heat and water in steam power plants. <b>2017</b> , 144, 351-360	62
1680	Annealing temperature dependent catalytic water oxidation activity of iron oxyhydroxide thin films. <b>2017</b> , 26, 757-761	28
1679	Design of ultralong single-crystal nanowire-based bifunctional electrodes for efficient oxygen and hydrogen evolution in a mild alkaline electrolyte. <b>2017</b> , 5, 10895-10901	20
1678	Partial-sacrificial-template Synthesis of Fe/Ni Phosphides on Ni Foam: a Strongly Stabilized and Efficient Catalyst for Electrochemical Water Splitting. <b>2017</b> , 242, 260-267	49
1677	Low-temperature electrolysis system modelling: A review. <b>2017</b> , 78, 280-300	81
1676	Self-Standing CoP Nanosheets Array: A Three-Dimensional Bifunctional Catalyst Electrode for Overall Water Splitting in both Neutral and Alkaline Media. <b>2017</b> , 4, 1840-1845	322
1675	Visible-light driven photocatalytic oxygen evolution reaction from new poly(phenylene cyanovinylens). <b>2017</b> , 143, 95-102	13
1674	Improved catalysts for hydrogen evolution reaction in alkaline solutions through the electrochemical formation of nickel-reduced graphene oxide interface. <b>2017</b> , 19, 13281-13293	35
1673	PEM water electrolyzer model for a power-hardware-in-loop simulator. <b>2017</b> , 42, 10775-10784	29
1672	In situ formation of highly active NiBe based oxygen-evolving electrocatalysts via simple reactive dip-coating. <b>2017</b> , 5, 11009-11015	54
1671	Electrochemical Hydrazine Oxidation Catalyzed by Iron Phosphide Nanosheets Array toward Energy-Efficient Electrolytic Hydrogen Production from Water. <b>2017</b> , 2, 3401-3407	21
1670	Ultrathin CoS <sub>2</sub> shells anchored on Co <sub>3</sub> O <sub>4</sub> nanoneedles for efficient hydrogen evolution electrocatalysis. <b>2017</b> , 356, 89-96	41
1669	From biomass chitin to mesoporous nanosheets assembled loofa sponge-like N-doped carbon/g-C <sub>3</sub> N <sub>4</sub> 3D network architectures as ultralow-cost bifunctional oxygen catalysts. <b>2017</b> , 240, 216-226	42
1668	Photovoltaic solar energy conversion for hydrogen production by alkaline water electrolysis: Conceptual design and analysis. <b>2017</b> , 133, 1-13	76

1667	The effect of magnetic and optic field in water electrolysis. <b>2017</b> , 42, 16325-16332	18
1666	Continuous-flow electroreduction of carbon dioxide. <i>Progress in Energy and Combustion Science</i> , <b>2017</b> , 62, 133-154	33.6 194
1665	Transition-Metal Chalcogenide/Graphene Ensembles for Light-Induced Energy Applications. <b>2017</b> , 23, 12967-12979	31
1664	Self-Healing in Nano-sized Manganese-Based Water-Oxidizing Catalysts. <b>2017</b> , 333-341	1
1663	Hydrogen Production and Water Electrolysis. <b>2017</b> , 159-202	
1662	Water splitting in near-neutral media: using an Mn $\text{Co}$ -based nanowire array as a complementary electrocatalyst. <b>2017</b> , 5, 12091-12095	29
1661	A Cost-Efficient Bifunctional Ultrathin Nanosheets Array for Electrochemical Overall Water Splitting. <b>2017</b> , 13, 1700355	59
1660	Hierarchical NiCoP nanocone arrays supported on Ni foam as an efficient and stable bifunctional electrocatalyst for overall water splitting. <b>2017</b> , 5, 14828-14837	187
1659	Highly Stable Three-Dimensional Porous Nickel-Iron Nitride Nanosheets for Full Water Splitting at High Current Densities. <b>2017</b> , 23, 10187-10194	46
1658	Ni $\text{Co}$ /G alloy as an earth-abundant robust and stable electrocatalyst for the hydrogen evolution reaction. <b>2017</b> , 41, 5916-5923	11
1657	Highly stable three-dimensional nickel $\text{iron}$ oxyhydroxide catalysts for oxygen evolution reaction at high current densities. <b>2017</b> , 245, 770-779	28
1656	Co-based nanowire films as complementary hydrogen- and oxygen-evolving electrocatalysts in neutral electrolyte. <b>2017</b> , 7, 2689-2694	34
1655	Bimetallic Ni $\text{Mo}$ nitride nanotubes as highly active and stable bifunctional electrocatalysts for full water splitting. <b>2017</b> , 5, 13648-13658	139
1654	Improving the water splitting performance of nickel electrodes by optimizing their pore structure using a phase inversion method. <b>2017</b> , 7, 3056-3064	11
1653	Hydrogen production, oxygen separation and syngas oxy-combustion inside a water splitting membrane reactor. <b>2017</b> , 113, 221-234	8
1652	Self-assembled two-dimensional copper oxide nanosheet bundles as an efficient oxygen evolution reaction (OER) electrocatalyst for water splitting applications. <b>2017</b> , 5, 12747-12751	120
1651	Nitrogen-Doped Nanoporous Carbon Membranes with Co/CoP Janus-Type Nanocrystals as Hydrogen Evolution Electrode in Both Acidic and Alkaline Environments. <b>2017</b> , 11, 4358-4364	168
1650	Three-Dimensional Nickel-Borate Nanosheets Array for Efficient Oxygen Evolution at Near-Neutral pH. <b>2017</b> , 23, 6959-6963	38

1649	Microwave-Electrochemical Deposition of a Fe-Co Alloy with Catalytic Ability in Hydrogen Evolution. <b>2017</b> , 235, 480-487	13
1648	Investigation of alkaline water electrolysis performance for different cost effective electrodes under magnetic field. <b>2017</b> , 42, 17583-17592	24
1647	Boosting the Performance of the Nickel Anode in the Oxygen Evolution Reaction by Simple Electrochemical Activation. <b>2017</b> , 56, 5061-5065	43
1646	Low-Cost and Durable Bipolar Plates for Proton Exchange Membrane Electrolyzers. <b>2017</b> , 7, 44035	54
1645	Boosting the Performance of the Nickel Anode in the Oxygen Evolution Reaction by Simple Electrochemical Activation. <b>2017</b> , 129, 5143-5147	13
1644	A cobalt-borate nanosheet array: an efficient and durable non-noble-metal electrocatalyst for water oxidation at near neutral pH. <b>2017</b> , 5, 7305-7308	66
1643	The effects of Al substitution and partial dissolution on ultrathin NiFeAl ternary layered double hydroxide nanosheets for oxygen evolution reaction in alkaline solution. <b>2017</b> , 35, 350-357	165
1642	Development of efficient membrane electrode assembly for low cost hydrogen production by anion exchange membrane electrolysis. <b>2017</b> , 42, 10752-10761	75
1641	Tuning the interface of Ni@Ni(OH) <sub>2</sub> /Pd/rGO catalyst to enhance hydrogen evolution activity and stability. <b>2017</b> , 352, 26-33	32
1640	Orthorhombic NiOOH Nanosheet Arrays: Phase Conversion and Efficient Bifunctional Electrocatalysts for Full Water Splitting. <b>2017</b> , 5, 3808-3818	69
1639	Benchmark comparison of Co <sub>3</sub> O <sub>4</sub> spinel-structured oxides with different morphologies for oxygen evolution reaction under alkaline conditions. <b>2017</b> , 47, 295-304	31
1638	Photodeposited ruthenium dioxide films for oxygen evolution reaction electrocatalysis. <b>2017</b> , 5, 1575-1580	18
1637	Impact of the current fluctuation on the efficiency of Alkaline Water Electrolysis. <b>2017</b> , 42, 5649-5656	30
1636	Electrodeposited Zn-Ni alloys as promising catalysts for hydrogen production-Preparation, characterization and electro-catalytic activity. <b>2017</b> , 699, 1146-1156	16
1635	Design and performance evaluation of a novel 1 kW-class hydrogen production/power generation system. <b>2017</b> , 194, 296-303	6
1634	Coupling thermoelectricity and electrocatalysis for hydrogen production via PbTe/PbS/TiO <sub>2</sub> heterojunction. <b>2017</b> , 342, 452-459	17
1633	Energy quality factor of materials conversion and energy quality reference system. <b>2017</b> , 185, 768-778	8
1632	A Perovskite Nanorod as Bifunctional Electrocatalyst for Overall Water Splitting. <b>2017</b> , 7, 1602122	262

1631	Electrochemical Hydrogen Production. <b>2017</b> , 897-940	2
1630	Efficient electricity storage with a battery, an integrated NiFe battery and electrolyser. <b>2017</b> , 10, 756-764	46
1629	Energy-Saving Electrolytic Hydrogen Generation: Ni P Nanoarray as a High-Performance Non-Noble-Metal Electrocatalyst. <b>2017</b> , 56, 842-846	428
1628	An Electrodeposited NiSe for Electrocatalytic Hydrogen and Oxygen Evolution Reactions in Alkaline Solution. <b>2017</b> , 224, 412-418	111
1627	Energy-Saving Electrolytic Hydrogen Generation: Ni2P Nanoarray as a High-Performance Non-Noble-Metal Electrocatalyst. <b>2017</b> , 129, 860-864	116
1626	Towards Versatile and Sustainable Hydrogen Production through Electrocatalytic Water Splitting: Electrolyte Engineering. <b>2017</b> , 10, 1318-1336	104
1625	Preparation of Porous NiCu Alloy Electrodes and their Electrocatalytic Performance as Cathode for Hydrogen Evolution Reaction in Alkaline Solution. <b>2017</b> , 12, 1750125	0
1624	A Zn-doped NiS nanosheet array as a high-performance electrochemical water oxidation catalyst in alkaline solution. <b>2017</b> , 53, 12446-12449	264
1623	Advances of zeolite based membrane for hydrogen production via water gas shift reaction. <b>2017</b> , 877, 012076	3
1622	Replacing oxygen evolution with sodium sulfide electro-oxidation toward energy-efficient electrochemical hydrogen production: Using cobalt phosphide nanoarray as a bifunctional catalyst. <b>2017</b> , 42, 26289-26295	8
1621	Crystal CoxB (x = 1/3) Synthesized by a Ball-Milling Method as High-Performance Electrocatalysts for the Oxygen Evolution Reaction. <b>2017</b> , 5, 10266-10274	49
1620	Engineering Co9S8/WS2 array films as bifunctional electrocatalysts for efficient water splitting. <b>2017</b> , 5, 23361-23368	88
1619	Oxygen Vacancies Dominated NiS /CoS Interface Porous Nanowires for Portable Zn-Air Batteries Driven Water Splitting Devices. <b>2017</b> , 29, 1704681	400
1618	Economic assessment of selected hydrogen production methods: A review. <b>2017</b> , 12, 1022-1029	14
1617	Membraneless Electrolyzers for Low-Cost Hydrogen Production in a Renewable Energy Future. <b>2017</b> , 1, 651-658	88
1616	Amorphous Phosphorus-Incorporated Cobalt Molybdenum Sulfide on Carbon Cloth: An Efficient and Stable Electrocatalyst for Enhanced Overall Water Splitting over Entire pH Values. <b>2017</b> , 9, 37739-37749	88
1615	Reverse Electrodialysis-Assisted Solar Water Splitting. <b>2017</b> , 7, 12281	4
1614	Synthesis of Self-Supported Amorphous CoMoO4 Nanowire Array for Highly Efficient Hydrogen Evolution Reaction. <b>2017</b> , 5, 10093-10098	78

1613	Vapor-fed solar hydrogen production exceeding 15% efficiency using earth abundant catalysts and anion exchange membrane. <b>2017</b> , 1, 2061-2065	24
1612	Effect of including the carbon nanotube and graphene oxide on the electrocatalytic behavior of the NiW alloy for the hydrogen evolution reaction. <b>2017</b> , 41, 13912-13917	8
1611	Graphitic carbon nitride (g-C <sub>3</sub> N <sub>4</sub> )-based photocatalysts for solar hydrogen generation: recent advances and future development directions. <b>2017</b> , 5, 23406-23433	358
1610	Electrolysis-Driven and Pressure-Controlled Diffusive Growth of Successive Bubbles on Microstructured Surfaces. <b>2017</b> , 33, 12873-12886	17
1609	A mechanical, high surface area and solvent-free powder-to-electrode fabrication method for screening OER catalysts. <b>2017</b> , 85, 1-5	9
1608	Recent advances in cobalt phosphide based materials for energy-related applications. <b>2017</b> , 5, 22913-22932	88
1607	Identification of pH-dependent synergy on Ru/MoS interface: a comparison of alkaline and acidic hydrogen evolution. <b>2017</b> , 9, 16616-16621	95
1606	High concentration of H <sub>2</sub> and O <sub>2</sub> nanobubbles in water electrolytes and their collective optical effect. <b>2017</b> ,	3
1605	Domain Structures of Ni and NiFe (Oxy)Hydroxide Oxygen-Evolution Catalysts from X-ray Pair Distribution Function Analysis. <b>2017</b> , 121, 25421-25429	20
1604	Surface Amorphization: A Simple and Effective Strategy toward Boosting the Electrocatalytic Activity for Alkaline Water Oxidation. <b>2017</b> , 5, 8518-8522	45
1603	Evolution of layered double hydroxides (LDH) as high performance water oxidation electrocatalysts: A review with insights on structure, activity and mechanism. <b>2017</b> , 6, 1-26	194
1602	One-Step Growth of Iron-Nickel Bimetallic Nanoparticles on FeNi Alloy Foils: Highly Efficient Advanced Electrodes for the Oxygen Evolution Reaction. <b>2017</b> , 9, 28627-28634	85
1601	Electrolyte Engineering towards Efficient Water Splitting at Mild pH. <b>2017</b> , 10, 4155-4162	32
1600	Controlled Electrodeposition Synthesis of Co-Ni-P Film as a Flexible and Inexpensive Electrode for Efficient Overall Water Splitting. <b>2017</b> , 9, 31887-31896	72
1599	Design of Nickel Electrodes by Electrodeposition: Effect of Internal Stress on Hydrogen Evolution Reaction in Alkaline Solutions. <b>2017</b> , 252, 67-75	26
1598	Operando current mapping on PEM water electrolysis cells. Influence of mechanical stress. <b>2017</b> , 42, 25848-25859	19
1597	Co O Nanowire Arrays toward Superior Water Oxidation Electrocatalysis in Alkaline Media by Surface Amorphization. <b>2017</b> , 23, 15601-15606	26
1596	Tuning the confinement space of N-carbon shell-coated ruthenium nanoparticles: highly efficient electrocatalysts for hydrogen evolution reaction. <b>2017</b> , 7, 4964-4970	30

1595	Storable hydrogen production by Reverse Electro-Electrodialysis (REED). <b>2017</b> , 544, 397-405	24
1594	Techno-Economic Assessment of Utilizing Wind Energy for Hydrogen Production Through Electrolysis. <b>2017</b> ,	4
1593	Remarkable Mass Activities for the Oxygen Evolution Reaction at Iridium Oxide Nanocatalysts Dispersed on Tin Oxides for Polymer Electrolyte Membrane Water Electrolysis. <b>2017</b> , 164, F944-F947	22
1592	Catalysts Encapsulated in Nanostructured Carbon Systems. <b>2017</b> , 71-122	0
1591	Semisynthetic Hydrogenases Propel Biological Energy Research into a New Era. <b>2017</b> , 1, 61-76	34
1590	Development of an operation strategy for hydrogen production using solar PV energy based on fluid dynamic aspects. <b>2017</b> , 7, 141-152	12
1589	Improvement of methane content in a hydrogenotrophic anaerobic digester via the proper operation of membrane module integrated into an external-loop. <b>2017</b> , 245, 1294-1298	13
1588	Effect of electrodes separator-type on hydrogen production using solar energy. <b>2017</b> , 140, 625-632	15
1587	Effect of operating parameters on hydrogen production by electrolysis of water. <b>2017</b> , 42, 25550-25557	74
1586	Experimental study and analytical modeling of an alkaline water electrolysis cell. <b>2017</b> , 41, 2365-2373	26
1585	Facilitating Active Species Generation by Amorphous NiFe-B Layer Formation on NiFe-LDH Nanoarray for Efficient Electrocatalytic Oxygen Evolution at Alkaline pH. <b>2017</b> , 23, 11499-11503	57
1584	Few-Layered MoWS Hollow Nanospheres on NiS Nanorod Heterostructure as Robust Electrocatalysts for Overall Water Splitting. <b>2017</b> , 9, 26066-26076	81
1583	Atomically Precise Gold Nanoclusters Accelerate Hydrogen Evolution over MoS Nanosheets: The Dual Interfacial Effect. <b>2017</b> , 13, 1701519	67
1582	The effect of a Lorentz-force-driven rotating flow on the detachment of gas bubbles from the electrode surface. <b>2017</b> , 42, 20923-20933	20
1581	Remarkable enhancement of the alkaline oxygen evolution reaction activity of NiCo <sub>2</sub> O <sub>4</sub> by an amorphous borate shell. <b>2017</b> , 4, 1546-1550	30
1580	A bifunctional electrocatalyst of PtNi nanoparticles immobilized on three-dimensional carbon nanofiber mats for efficient and stable water splitting in both acid and basic media. <b>2017</b> , 52, 13064-13077	30
1579	In Situ Electrochemical Production of Ultrathin Nickel Nanosheets for Hydrogen Evolution Electrocatalysis. <b>2017</b> , 3, 122-133	150
1578	Electrocatalytic hydrogen evolution reaction with a supramolecular cobalt(II)phthalocyanine carrying four cobaloxime moieties. <b>2017</b> , 466, 591-598	23

1577	Molybdenum carbides embedded on carbon nanotubes for efficient hydrogen evolution reaction. <b>2017</b> , 801, 7-13	19
1576	Homologous Catalysts Based on Fe-Doped CoP Nanoarrays for High-Performance Full Water Splitting under Benign Conditions. <b>2017</b> , 10, 3188-3192	49
1575	Electrocatalysts Derived from Metal-Organic Frameworks for Oxygen Reduction and Evolution Reactions in Aqueous Media. <b>2017</b> , 13, 1701143	125
1574	A self-supported NiMoS <sub>4</sub> nanoarray as an efficient 3D cathode for the alkaline hydrogen evolution reaction. <b>2017</b> , 5, 16585-16589	94
1573	NiWO <sub>3</sub> Nanoparticles Grown on Graphitic Carbon Nitride (g-C <sub>3</sub> N <sub>4</sub> ) Supported Toray Carbon as an Efficient Bifunctional Electrocatalyst for Oxygen and Hydrogen Evolution Reactions. <b>2017</b> , 34, 1700043	10
1572	Facile preparation of nanocrystalline TiO <sub>2</sub> thin films using electrophoretic deposition for enhancing photoelectrochemical water splitting response. <b>2017</b> , 28, 16244-16253	7
1571	Bromine and nitrogen co-doped tungsten nanoarrays to enable hydrogen evolution at all pH values. <b>2017</b> , 5, 17856-17861	8
1570	A perspective on hydrogen production via high temperature steam electrolysis. <b>2017</b> , 60, 1379-1381	3
1569	Enhanced Oxygen Evolution Reaction Electrocatalysis via Electrodeposited Amorphous $\beta$ -Phase Nickel-Cobalt Hydroxide Nanodendrite Forests. <b>2017</b> , 9, 28355-28365	53
1568	Methane conversion using a dielectric barrier discharge reactor at atmospheric pressure for hydrogen production. <b>2017</b> , 19, 095502	15
1567	Investigation of the formation mechanism of titanium oxide nanotubes and its electrochemical evaluation. <b>2017</b> , 47, 1147-1159	11
1566	A Multisite Strategy for Enhancing the Hydrogen Evolution Reaction on a Nano-Pd Surface in Alkaline Media. <b>2017</b> , 7, 1701129	78
1565	NiS Nanosheet Flowers Decorated with CdS Quantum Dots as a Highly Active Electrocatalysis Electrode for Synergistic Water Splitting. <b>2017</b> , 9, 29660-29668	63
1564	Polyoxometalates Assemblies and Their Electrochemical Applications. <b>2017</b> , 89-119	6
1563	Minimising the ohmic resistance of an alkaline electrolysis cell through effective cell design. <b>2017</b> , 42, 23986-23994	52
1562	Anion-exchange synthesis of a nanoporous crystalline CoBO nanowire array for high-performance water oxidation electrocatalysis in borate solution. <b>2017</b> , 9, 12343-12347	17
1561	Future cost and performance of water electrolysis: An expert elicitation study. <b>2017</b> , 42, 30470-30492	730
1560	Activating cobalt(II) oxide nanorods for efficient electrocatalysis by strain engineering. <b>2017</b> , 8, 1509	276

1559	Ruthenium/nitrogen-doped carbon as an electrocatalyst for efficient hydrogen evolution in alkaline solution. <b>2017</b> , 5, 25314-25318	94
1558	Porous NiFe-Oxide Nanocubes as Bifunctional Electrocatalysts for Efficient Water-Splitting. <b>2017</b> , 9, 41906-41915	170
1557	Aligned and stable metallic MoS <sub>2</sub> on plasma-treated mass transfer channels for the hydrogen evolution reaction. <b>2017</b> , 5, 25359-25367	23
1556	Das Power-to-Methane-Konzept. <b>2017</b> ,	6
1555	Striking hierarchical urchin-like peapodded NiCo <sub>2</sub> O <sub>4</sub> @C as advanced bifunctional electrocatalyst for overall water splitting. <b>2017</b> , 372, 46-53	43
1554	Surface Modification of a NiS Nanoarray with Ni(OH) <sub>2</sub> toward Superior Water Reduction Electrocatalysis in Alkaline Media. <b>2017</b> , 56, 13651-13654	69
1553	Hydrogen production from a rectangular horizontal filter press Divergent Electrode-Flow-Through (DEFT) alkaline electrolysis stack. <b>2017</b> , 372, 252-259	19
1552	The effect of membrane on an alkaline water electrolyzer. <b>2017</b> , 42, 29661-29665	60
1551	Improved interfacial H <sub>2</sub> O supply by surface hydroxyl groups for enhanced alkaline hydrogen evolution. <b>2017</b> , 5, 24091-24097	28
1550	In Situ Derived Co <sub>3</sub> B Nanoarray: A High-Efficiency and Durable 3D Bifunctional Electrocatalyst for Overall Alkaline Water Splitting. <b>2017</b> , 13, 1700805	257
1549	Ultrathin Two-Dimensional Nanostructured Materials for Highly Efficient Water Oxidation. <b>2017</b> , 13, 1700806	85
1548	Hierarchical MoP/Ni <sub>2</sub> P heterostructures on nickel foam for efficient water splitting. <b>2017</b> , 5, 15940-15949	218
1547	Cobalt/molybdenum carbide@N-doped carbon as a bifunctional electrocatalyst for hydrogen and oxygen evolution reactions. <b>2017</b> , 5, 16929-16935	201
1546	Modelling and simulation of an alkaline electrolyser cell. <b>2017</b> , 138, 316-331	29
1545	Fluorine substituted (Mn,Ir)O <sub>2</sub> :F high performance solid solution oxygen evolution reaction electro-catalysts for PEM water electrolysis. <b>2017</b> , 7, 17311-17324	36
1544	Nitrogen-enriched polydopamine analogue-derived defect-rich porous carbon as a bifunctional metal-free electrocatalyst for highly efficient overall water splitting. <b>2017</b> , 5, 17064-17072	50
1543	Electrocatalytic Activity and Durability of Li <sub>x</sub> Ni <sub>2-x</sub> O <sub>2</sub> /Ni Electrode Prepared by Oxidation with LiOH Melt for Alkaline Water Electrolysis. <b>2017</b> , 8, 422-429	7
1542	Advancements and confinements in hydrogen production technologies. <b>2017</b> , 373-418	8

1541	Synthesis of lawn-like NiS <sub>2</sub> nanowires on carbon fiber paper as bifunctional electrode for water splitting. <b>2017</b> , 42, 17038-17048	52
1540	Enhancing photoelectrochemical hydrogen production over Cu and Ni doped titania thin film: Effect of calcination duration. <b>2017</b> , 5, 3207-3214	18
1539	Challenges in the Greener Production of Formates/Formic Acid, Methanol, and DME by Heterogeneously Catalyzed CO Hydrogenation Processes. <b>2017</b> , 117, 9804-9838	688
1538	Electrocatalytic activity of porous NiFeMoO <sub>4</sub> /NiS sintered electrodes for hydrogen evolution reaction in alkaline solution. <b>2017</b> , 7, 32264-32274	8
1537	Power-to-gas technology in energy systems: current status and prospects of potential operation strategies. <b>2017</b> , 5, 439-450	35
1536	Hydrogen Evolution from Native Biomass with Fe <sup>3+</sup> /Fe <sup>2+</sup> Redox Couple Catalyzed Electrolysis. <b>2017</b> , 246, 1163-1173	35
1535	CoS nanosheet arrays grown on nickel foam as an excellent OER catalyst. <b>2017</b> , 723, 772-778	53
1534	Closed Bipolar Electrodes for Spatial Separation of H and O Evolution during Water Electrolysis and the Development of High-Voltage Fuel Cells. <b>2017</b> , 9, 23654-23661	34
1533	Compact and General Strategy for Solving Current and Potential Distribution in Electrochemical Cells Composed of Massive Monopolar and Bipolar Electrodes. <b>2017</b> , 164, E3465-E3472	12
1532	The photoelectrocatalytic activity, long term stability and corrosion performance of NiMo deposited titanium oxide nano-tubes for hydrogen production in alkaline medium. <b>2017</b> , 423, 704-715	8
1531	Fe-Doped CoP Nanoarray: A Monolithic Multifunctional Catalyst for Highly Efficient Hydrogen Generation. <b>2017</b> , 29, 1602441	690
1530	Stabilitätsanforderungen von Elektrokatalysatoren für die Sauerstoffentwicklung: der Weg zu einem grundlegenden Verständnis und zur Minimierung der Katalysatordegradation. <b>2017</b> , 129, 6088-6117	54
1529	The Stability Challenges of Oxygen Evolving Catalysts: Towards a Common Fundamental Understanding and Mitigation of Catalyst Degradation. <b>2017</b> , 56, 5994-6021	379
1528	Facile Synthesis of Heterostructured Nickel/Nickel Oxide Wrapped Carbon Fiber: Flexible Bifunctional Gas-Evolving Electrode for Highly Efficient Overall Water Splitting. <b>2017</b> , 5, 529-536	51
1527	Engineering Disorder into Heterogenite-Like Cobalt Oxides by Phosphate Doping: Implications for the Design of Water-Oxidation Catalysts. <b>2017</b> , 9, 511-521	18
1526	Electrodeposited hybrid NiB/MoS <sub>x</sub> film as efficient electrocatalyst for hydrogen evolution in alkaline media. <b>2017</b> , 42, 2952-2960	76
1525	Nickel selenide supported on nickel foam as an efficient and durable non-precious electrocatalyst for the alkaline water electrolysis. <b>2017</b> , 203, 485-493	165
1524	Simple Aqueous Preparation of High Activity and Stability NiFe Hydrous Oxide Catalysts for Water Oxidation. <b>2017</b> , 5, 1106-1112	21

1523	Photophysics and electrochemistry relevant to photocatalytic water splitting involved at solid-electrolyte interfaces. <b>2017</b> , 26, 259-269	14
1522	Measurement Techniques for the Study of Thin Film Heterogeneous Water Oxidation Electrocatalysts. <b>2017</b> , 29, 120-140	335
1521	Experimental Investigation of Producing Brown's Gas using a Metal-Plate Electrolyzer for Diesel Vehicle Applications. <b>2017</b> , 5, 244-252	1
1520	Techno-economic and Life Cycle Assessment of methane production via biogas upgrading and power to gas technology. <b>2017</b> , 192, 282-295	191
1519	A comparative overview of hydrogen production processes. <b>2017</b> , 67, 597-611	1004
1518	Electrocatalysts for the generation of hydrogen, oxygen and synthesis gas. <i>Progress in Energy and Combustion Science</i> , <b>2017</b> , 58, 1-35	33.6 311
1517	Molecular hydrogen production from wastewater electrolysis cell with multi-junction BiOx/TiO2 anode and stainless steel cathode: Current and energy efficiency. <b>2017</b> , 202, 671-682	29
1516	A one-dimensional porous carbon-supported Ni/MoC dual catalyst for efficient water splitting. <b>2017</b> , 8, 968-973	301
1515	Analytical modelling and experimental validation of proton exchange membrane electrolyser for hydrogen production. <b>2017</b> , 42, 1366-1374	52
1514	Water electrolysis experimental characterization and numerical model: Case of study with three kind of electrodes. <b>2017</b> ,	
1513	Water nanoelectrolysis: A simple model. <b>2017</b> , 122, 244902	
1512	Performance and degradation of an SOEC stack with different cell components. <b>2017</b> , 258, 1254-1261	33
1511	Electrochemical Production of Glycolic Acid from Oxalic Acid Using a Polymer Electrolyte Alcohol Electrosynthesis Cell Containing a Porous TiO Catalyst. <b>2017</b> , 7, 17032	25
1510	Methane decomposition for hydrogen production by catalytic activity of carbon black under low flow rate conditions. <b>2017</b> , 125, 185-189	2
1509	A curtailed wind power accommodation strategy based on wind-hydrogen-heat-storage integrated energy network. <b>2017</b> ,	3
1508	Photocatalytic Water Oxidation on ZnO: A Review. <b>2017</b> , 7, 93	91
1507	Site-Dependent Environmental Impacts of Industrial Hydrogen Production by Alkaline Water Electrolysis. <b>2017</b> , 10, 860	40
1506	Economic Analysis of Improved Alkaline Water Electrolysis. <b>2017</b> , 5,	41

1505	Assessing Uncertainties of Well-To-Tank Greenhouse Gas Emissions from Hydrogen Supply Chains. <b>2017</b> , 9, 1101	22
1504	Green Pulp Mill: Renewable Alternatives to Fossil Fuels in Lime Kiln Operations. <b>2017</b> , 12,	13
1503	Interface engineering: The Ni(OH) <sub>2</sub> /MoS <sub>2</sub> heterostructure for highly efficient alkaline hydrogen evolution. <b>2017</b> , 37, 74-80	329
1502	Development of dynamic simulator of alkaline water electrolyzer for optimizing renewable energy systems. <b>2018</b> , 8, 19-24	4
1501	Surface engineering of hierarchical Ni(OH) <sub>2</sub> nanosheet@nanowire configuration toward superior urea electrolysis. <b>2018</b> , 268, 211-217	50
1500	Al-Doped NiP nanosheet array: a superior and durable electrocatalyst for alkaline hydrogen evolution. <b>2018</b> , 54, 2894-2897	84
1499	Precision and correctness in the evaluation of electrocatalytic water splitting: revisiting activity parameters with a critical assessment. <b>2018</b> , 11, 744-771	628
1498	Electrodeposited amorphous Co <sub>3</sub> B ternary catalyst for hydrogen evolution reaction. <b>2018</b> , 6, 6282-6288	60
1497	Hydrogen production by a low-cost electrolyzer developed through the combination of alkaline water electrolysis and solar energy use. <b>2018</b> , 43, 4265-4275	45
1496	Hydrogen: A brief overview on its sources, production and environmental impact. <b>2018</b> , 43, 10605-10614	236
1495	Chlorine-free alkaline seawater electrolysis for hydrogen production. <b>2018</b> , 43, 6504-6514	42
1494	Optimizing parameters affecting synthesis of CuBTC using response surface methodology and development of AC@CuBTC composite for enhanced hydrogen uptake. <b>2018</b> , 43, 6654-6665	10
1493	Ultrathin NiCo <sub>2</sub> Px nanosheets strongly coupled with CNTs as efficient and robust electrocatalysts for overall water splitting. <b>2018</b> , 6, 7420-7427	241
1492	Controlled Synthesis of Eutectic NiSe/Ni <sub>3</sub> Se <sub>2</sub> Self-Supported on Ni Foam: An Excellent Bifunctional Electrocatalyst for Overall Water Splitting. <b>2018</b> , 5, 1701507	49
1491	Experimental study on direct solar photocatalytic water splitting for hydrogen production using surface uniform concentrators. <b>2018</b> , 43, 13745-13753	17
1490	A theoretical study on the mechanism of hydrogen evolution on non-precious partially oxidized nickel-based heterostructures for fuel cells. <b>2018</b> , 20, 7968-7973	11
1489	Hierarchical CoTe <sub>2</sub> Nanowire Array: An Effective Oxygen Evolution Catalyst in Alkaline Media. <b>2018</b> , 6, 4481-4485	32
1488	Coupling-Effect-Induced Acceleration of Electron Transfer for Ni(OH) <sub>2</sub> with Enhanced Oxygen Evolution Reaction Activity. <b>2018</b> , 1, 1476-1483	17

1487	Earth-Abundant Silicon for Facilitating Water Oxidation over Iron-Based Perovskite Electrocatalyst. <b>2018</b> , 5, 1701693	40
1486	NiTe Nanowire Outperforms Pt/C in High-Rate Hydrogen Evolution at Extreme pH Conditions. <b>2018</b> , 57, 3082-3096	55
1485	Non-Precious Bimetallic CoCr Nanostructures Entrapped in Bamboo-Like Nitrogen-Doped Graphene Tube As a Robust Bifunctional Electrocatalyst for Total Water Splitting. <b>2018</b> , 1, 1116-1126	28
1484	One-pot hydrothermal synthesis of strontium titanate nanoparticles photoelectrode using electrophoretic deposition for enhancing photoelectrochemical water splitting. <b>2018</b> , 44, 9923-9933	16
1483	Roles of Ultrasound on Hydroxyl Radical Generation and Bauxite Desulfurization from Water Electrolysis. <b>2018</b> , 165, E177-E183	6
1482	Experimental study on the external electrical thermal and dynamic power characteristics of alkaline water electrolyzer. <b>2018</b> , 42, 3244-3257	10
1481	On the origin of the photocurrent of electrochemically passivated p-InP(100) photoelectrodes. <b>2018</b> , 20, 14242-14250	11
1480	Synergistically enhanced hydrogen evolution electrocatalysis by in situ exsolution of metallic nanoparticles on perovskites. <b>2018</b> , 6, 13582-13587	56
1479	Selected Review of the Degradation of Pt and Pd-based Carbon-supported Electrocatalysts for Alkaline Fuel Cells: Towards Mechanisms of Degradation. <b>2018</b> , 18, 229-238	49
1478	In pursuit of bifunctional catalytic activity in PdS <sub>2</sub> pseudo-monolayer through reaction coordinate mapping. <b>2018</b> , 49, 283-289	28
1477	Construction of amorphous interface in an interwoven NiS/NiS <sub>2</sub> structure for enhanced overall water splitting. <b>2018</b> , 6, 8233-8237	108
1476	Enhanced hydrogen evolution reaction activity of hydrogen-annealed vertical MoS nanosheets.. <b>2018</b> , 8, 14369-14376	20
1475	Hydrogen production, storage, transportation and key challenges with applications: A review. <b>2018</b> , 165, 602-627	477
1474	Synergistic effect between undercoordinated platinum atoms and defective nickel hydroxide on enhanced hydrogen evolution reaction in alkaline solution. <b>2018</b> , 48, 590-599	60
1473	Self-supported Ni <sub>3</sub> S <sub>2</sub> @MoS <sub>2</sub> core/shell nanorod arrays via decoration with CoS as a highly active and efficient electrocatalyst for hydrogen evolution and oxygen evolution reactions. <b>2018</b> , 43, 8794-8804	31
1472	Electrochemical fabrication of 3D quasi-amorphous pompon-like Co-O and Co-Se hybrid films from choline chloride/urea deep eutectic solvent for efficient overall water splitting. <b>2018</b> , 273, 71-79	20
1471	Structure Effects of 2D Materials on Nickel Hydroxide for Oxygen Evolution Reaction. <b>2018</b> , 12, 3875-3885	132
1470	Spontaneous galvanic displacement of Pt nanostructures on nickel foam: Synthesis, characterization and use for hydrogen evolution reaction. <b>2018</b> , 43, 7903-7910	13

1469	Activating Titania for Efficient Electrocatalysis by Vacancy Engineering. <b>2018</b> , 8, 4288-4293	104
1468	Ru nanodendrites composed of ultrathin fcc/hcp nanoblades for the hydrogen evolution reaction in alkaline solutions. <b>2018</b> , 54, 4613-4616	37
1467	Investigation of the effect of charge transfer coefficient (CTC) on the operating voltage of polymer electrolyte membrane (PEM) electrolyzer. <b>2018</b> , 43, 9119-9132	22
1466	Analysis of the Anode Reaction of Solid Oxide Electrolyzer Cells with BaZr <sub>0.4</sub> Ce <sub>0.4</sub> Y <sub>0.2</sub> O <sub>3-δ</sub> Electrolytes and Sm <sub>0.5</sub> Sr <sub>0.5</sub> CoO <sub>3-δ</sub> Anodes. <b>2018</b> , 165, F342-F349	11
1465	Electrochemical growth of MoS <sub>x</sub> on Cu foam: A highly active and robust three-dimensional cathode for hydrogen evolution. <b>2018</b> , 43, 4978-4986	13
1464	Ternary interfacial superstructure enabling extraordinary hydrogen evolution electrocatalysis. <b>2018</b> , 21, 602-610	32
1463	Lab-Scale Alkaline Water Electrolyzer for Bridging Material Fundamentals with Realistic Operation. <b>2018</b> , 6, 4829-4837	24
1462	In situ growth of NiTe nanosheet film on nickel foam as electrocatalyst for oxygen evolution reaction. <b>2018</b> , 88, 29-33	42
1461	Constructing hierarchical mushroom-like bifunctional NiCo/NiCo <sub>2</sub> S <sub>4</sub> @NiCo/Ni foam electrocatalysts for efficient overall water splitting in alkaline media. <b>2018</b> , 265, 19-31	46
1460	Co-W/CeO <sub>2</sub> composite coatings for highly active electrocatalysis of hydrogen evolution reaction. <b>2018</b> , 743, 682-690	24
1459	Phosphorus-Doped Co <sub>3</sub> O <sub>4</sub> Nanowire Array: A Highly Efficient Bifunctional Electrocatalyst for Overall Water Splitting. <b>2018</b> , 8, 2236-2241	367
1458	Recent progress and perspectives of bifunctional oxygen reduction/evolution catalyst development for regenerative anion exchange membrane fuel cells. <b>2018</b> , 47, 172-198	98
1457	Nanostructured electrodes for hydrogen production in alkaline electrolyzer. <b>2018</b> , 123, 117-124	22
1456	Economic feasibility studies of high pressure PEM water electrolysis for distributed H <sub>2</sub> refueling stations. <b>2018</b> , 162, 139-144	31
1455	Electrolytic Synthesis of Ni-W-MWCNT Composite Coating for Alkaline Hydrogen Evolution Reaction. <b>2018</b> , 27, 1033-1039	5
1454	Nickel Ditelluride Nanosheet Arrays: A Highly Efficient Electrocatalyst for the Oxygen Evolution Reaction. <b>2018</b> , 5, 1153-1158	33
1453	Decoupling Hydrogen and Oxygen Production in Acidic Water Electrolysis Using a Polytriphenylamine-Based Battery Electrode. <b>2018</b> , 57, 2904-2908	45
1452	Wet-chemistry topotactic synthesis of bimetallic iron/nickel sulfide nanoarrays: an advanced and versatile catalyst for energy efficient overall water and urea electrolysis. <b>2018</b> , 6, 4346-4353	127

1451	Accelerated Hydrogen Evolution Kinetics on NiFe-Layered Double Hydroxide Electrocatalysts by Tailoring Water Dissociation Active Sites. <b>2018</b> , 30, 1706279	390
1450	Facile synthesis of prickly platinum-palladium core-shell nanocrystals and their boosted electrocatalytic activity towards polyhydric alcohols oxidation and hydrogen evolution. <b>2018</b> , 516, 476-483	20
1449	A self-supported amorphous Ni-P alloy on a CuO nanowire array: an efficient 3D electrode catalyst for water splitting in alkaline media. <b>2018</b> , 54, 2393-2396	58
1448	Engineered MoSe <sub>2</sub> -Based Heterostructures for Efficient Electrochemical Hydrogen Evolution Reaction. <b>2018</b> , 8, 1703212	107
1447	Bioinspired Pressure-Tolerant Asymmetric Slippery Surface for Continuous Self-Transport of Gas Bubbles in Aqueous Environment. <b>2018</b> , 12, 2048-2055	115
1446	Exergoeconomic analysis of natural gas fired and biomass post-fired combined cycle with hydrogen injection into the combustion chamber. <b>2018</b> , 180, 450-465	24
1445	Scalable one-step electrochemical deposition of nanoporous amorphous S-doped NiFe <sub>2</sub> O <sub>4</sub> /Ni <sub>3</sub> Fe composite films as highly efficient electrocatalysts for oxygen evolution with ultrahigh stability. <b>2018</b> , 6, 1551-1560	66
1444	Mutually beneficial Co <sub>3</sub> O <sub>4</sub> @MoS <sub>2</sub> heterostructures as a highly efficient bifunctional catalyst for electrochemical overall water splitting. <b>2018</b> , 6, 2067-2072	129
1443	Optimized photoelectrochemical tandem cell for solar water splitting. <b>2018</b> , 13, 175-188	36
1442	Interface engineering of a CeO-CuP nanoarray for efficient alkaline hydrogen evolution. <b>2018</b> , 10, 2213-2217	84
1441	Efficient Hydrogen Evolution Electrocatalysis at Alkaline pH by Interface Engineering of NiP-CeO. <b>2018</b> , 57, 548-552	63
1440	Hydrogen Evolution Reaction in Alkaline Media: Alpha- or Beta-Nickel Hydroxide on the Surface of Platinum?. <b>2018</b> , 3, 237-244	148
1439	Ultrathin CoFe-Borate Layer Coated CoFe-Layered Double Hydroxide Nanosheets Array: A Non-Noble-Metal 3D Catalyst Electrode for Efficient and Durable Water Oxidation in Potassium Borate. <b>2018</b> , 6, 1527-1531	112
1438	Surface characteristics and electrolysis efficiency of a Palladium-Nickel electrode. <b>2018</b> , 43, 1998-2008	10
1437	Solar thermal decoupled water electrolysis process II: An extended investigation of the anodic electrochemical reaction. <b>2018</b> , 181, 159-172	6
1436	Synthesis, Characterization, and Photoelectrochemical Catalytic Studies of a Water-Stable Zinc-Based Metal-Organic Framework. <b>2018</b> , 11, 542-546	14
1435	Electrocatalytic hydrogen evolution with cobalt-poly(4-vinylpyridine) metallopolymers. <b>2018</b> , 48, 201-209	10
1434	Co(OH) Nanoparticle-Encapsulating Conductive Nanowires Array: Room-Temperature Electrochemical Preparation for High-Performance Water Oxidation Electrocatalysis. <b>2018</b> , 30, 1705366	240

1433	Adams Method Prepared Metal Oxide Catalysts for Solar-Driven Water Splitting. <b>2018</b> , 2, 293-299	10
1432	A Ni(OH) <sub>2</sub> /BiO <sub>2</sub> hybrid nanosheet array with ultralow Pt loading toward efficient and durable alkaline hydrogen evolution. <b>2018</b> , 6, 1967-1970	119
1431	CoFex-CoFe <sub>2</sub> O <sub>4</sub> /N-doped carbon nanocomposite derived from in situ pyrolysis of a single source precursor as a superior bifunctional electrocatalyst for water splitting. <b>2018</b> , 262, 18-26	21
1430	Degradation Kinetics during Oxygen Electrocatalysis on Perovskite-Based Surfaces in Alkaline Media. <b>2018</b> , 34, 1347-1352	15
1429	Enhanced Catalysis of Electrochemical Overall Water Splitting in Alkaline Media by Fe Doping in Ni <sub>3</sub> S <sub>2</sub> Nanosheet Arrays. <b>2018</b> , 8, 5431-5441	328
1428	Catalysis of the hydrogen evolution reaction by hydrogen carbonate to decrease the voltage of microbial electrolysis cell fed with domestic wastewater. <b>2018</b> , 275, 32-39	18
1427	Liquid metal activated aluminum-water reaction for direct hydrogen generation at room temperature. <b>2018</b> , 92, 17-37	55
1426	Anion conducting multiblock copolymers with multiple head-groups. <b>2018</b> , 6, 9000-9008	37
1425	Development of a Press-Type Direct Carbon Fuel Cell for Higher and More Stable Power Output. <b>2018</b> , 165, F430-F435	1
1424	Fe Co <sub>1-x</sub> Doped titanium oxide nanotubes as effective photocatalysts for hydrogen extraction from ammonium phosphate. <b>2018</b> , 43, 7990-7997	14
1423	Techno-economic analysis of a coal to hydrogen process based on ash agglomerating fluidized bed gasification. <b>2018</b> , 164, 552-559	24
1422	Regular Dimpled Nickel Surfaces for Improved Efficiency of the Oxygen Evolution Reaction. <b>2018</b> , 1, 1771-1782	14
1421	Theoretical and Experimental Insight into the Effect of Nitrogen Doping on Hydrogen Evolution Activity of Ni <sub>3</sub> S <sub>2</sub> in Alkaline Medium. <b>2018</b> , 8, 1703538	159
1420	Production and use of HHO gas in IC engines. <b>2018</b> , 43, 7140-7154	44
1419	Ultrashort-pulse laser structured titanium surfaces with sputter-coated platinum catalyst as hydrogen evolution electrodes for alkaline water electrolysis. <b>2018</b> , 43, 7216-7226	22
1418	Microwave-assisted synthesis of graphene-like cobalt sulfide freestanding sheets as an efficient bifunctional electrocatalyst for overall water splitting. <b>2018</b> , 6, 7592-7607	73
1417	Alkaline anion exchange membrane water electrolysis: Effects of electrolyte feed method and electrode binder content. <b>2018</b> , 382, 22-29	53
1416	Efficient oxygen evolution electrocatalyzed by a Cu nanoparticle-embedded N-doped carbon nanowire array. <b>2018</b> , 5, 1188-1192	52

1415	A transition metal oxysulfide cathode for the proton exchange membrane water electrolyzer. <b>2018</b> , 232, 93-100	33
1414	Hydrogen Production by Water Decomposition through Redox Reaction of Ce-based Metal Oxide Systems in Electric Field. <b>2018</b> , 47, 643-646	2
1413	Emerging Two-Dimensional Nanomaterials for Electrocatalysis. <b>2018</b> , 118, 6337-6408	1057
1412	Seawater splitting for hydrogen evolution by robust electrocatalysts from secondary M (M = Cr, Fe, Co, Ni, Mo) incorporated Pt.. <b>2018</b> , 8, 9423-9429	19
1411	Decoupling Hydrogen and Oxygen Production in Acidic Water Electrolysis Using a Polytriphenylamine-Based Battery Electrode. <b>2018</b> , 130, 2954-2958	12
1410	High-Rate Electrochemical Reduction of Carbon Monoxide to Ethylene Using Cu-Nanoparticle-Based Gas Diffusion Electrodes. <b>2018</b> , 3, 855-860	50
1409	A new methanation and membrane based power-to-gas process for the direct integration of raw biogas [Feasibility and comparison. <b>2018</b> , 146, 34-46	32
1408	Accelerated service life test of electrodeposited NiSn alloys as bifunctional catalysts for alkaline water electrolysis under industrial operating conditions. <b>2018</b> , 819, 16-25	17
1407	Dimensional Analysis of an Electromembrane Reactor for Recycling and Resource Recovery of Flue Gas Desulfurization Residuals. <b>2018</b> , 35, 76-87	2
1406	Modification of porous nickel electrodes with silver nanoparticles for hydrogen production. <b>2018</b> , 808, 420-426	7
1405	Tech-integrated paradigm based approaches towards carbon-free hydrogen production. <b>2018</b> , 82, 4279-4295	9
1404	Techno-economic study of hydrogen production using CSP technology. <b>2018</b> , 43, 3406-3417	39
1403	Low cost hydrogen production by anion exchange membrane electrolysis: A review. <b>2018</b> , 81, 1690-1704	280
1402	Water Splitting Catalysis Studied by using Real-Time Faradaic Efficiency Obtained through Coupled Electrolysis and Mass Spectrometry. <b>2018</b> , 5, 44-50	8
1401	Solar-to-Hydrogen Energy Conversion Based on Water Splitting. <b>2018</b> , 8, 1701620	285
1400	Bifunctional Electrocatalytic Behavior of Sodium Cobalt Phosphates in Alkaline Solution. <b>2018</b> , 5, 153-158	35
1399	Electrochemical water oxidation: The next five years. <b>2018</b> , 7, 31-35	32
1398	N-doped Ni/C/TiO <sub>2</sub> nanocomposite as effective photocatalyst for water splitting. <b>2018</b> , 210, 317-320	14

1397	Electrochemical hydrogen storage properties of NiAl <sub>2</sub> O <sub>4</sub> /NiO nanostructures using TiO <sub>2</sub> , SiO <sub>2</sub> and graphene by auto-combustion method using green tea extract. <b>2018</b> , 115, 199-207	49
1396	Theoretical Evidence behind Bifunctional Catalytic Activity in Pristine and Functionalized Al C Monolayers. <b>2018</b> , 19, 148-152	8
1395	Nickel-based electrodes as catalysts for hydrogen evolution reaction in alkaline media. <b>2018</b> , 24, 1121-1127	18
1394	Synthesis and Performance of Nickel/Reduced Graphene Oxide Hybrid for Hydrogen Evolution Reaction.. <b>2018</b> , 9, 47-58	15
1393	Current status of water electrolysis for energy storage, grid balancing and sector coupling via power-to-gas and power-to-liquids: A review. <b>2018</b> , 82, 2440-2454	670
1392	A review of energy management strategies for renewable hybrid energy systems with hydrogen backup. <b>2018</b> , 82, 126-155	120
1391	Self-Supported Hierarchical Nanostructured NiFe-LDH and Cu <sub>3</sub> P Weaving Mesh Electrodes for Efficient Water Splitting. <b>2018</b> , 6, 380-388	63
1390	Hydrogen Energy Technology, Renewable Source of Energy. <b>2018</b> , 135-179	2
1389	Self-Supported Porous NiSe <sub>2</sub> Nanowrinkles as Efficient Bifunctional Electrocatalysts for Overall Water Splitting. <b>2018</b> , 6, 2231-2239	90
1388	Interface engineering of the Ni(OH) <sub>2</sub> /Ni <sub>3</sub> N nanoarray heterostructure for the alkaline hydrogen evolution reaction. <b>2018</b> , 6, 833-836	76
1387	Floating membraneless PV-electrolyzer based on buoyancy-driven product separation. <b>2018</b> , 43, 1224-1238	37
1386	Collective behavior of bulk nanobubbles produced by alternating polarity electrolysis. <b>2017</b> , 10, 428-435	22
1385	Life cycle analysis of a combined CO <sub>2</sub> capture and conversion membrane reactor. <b>2018</b> , 549, 142-150	16
1384	Design and implementation of a power-hardware-in-loop simulator for water electrolysis emulation. <b>2018</b> , 119, 106-115	10
1383	Electrocatalytic behavior of transition metal (Ni, Fe, Cr) doped metal oxide nanocomposites for oxygen evolution reaction. <b>2018</b> , 449, 660-668	26
1382	Remarkably enhanced water splitting activity of nickel foam due to simple immersion in a ferric nitrate solution. <b>2018</b> , 11, 3959-3971	45
1381	Combining water reduction and liquid fuel oxidization by nickel hydroxide for flexible hydrogen production. <b>2018</b> , 11, 260-266	12
1380	The effect of phosphating time on the electrocatalytic activity of nickel phosphide nanorod arrays grown on Ni foam. <b>2018</b> , 33, 556-567	12

1379	Chemically durable polymer electrolytes for solid-state alkaline water electrolysis. <b>2018</b> , 375, 367-372	55
1378	Experimental Demonstration and Validation of Hydrogen Production Based on Gasification of Lignocellulosic Feedstock. <b>2018</b> , 2, 61	2
1377	Halide-Modulated Functionality of Wide Band Gap Zinc Oxide Semiconductor Nanoparticle. <b>2018</b> , 3, 6382-6393	4
1376	Performance Enhancement of Alkaline Water Electrolyzer Using Nanostructured Electrodes Synthesized by Template Electrosynthesis. <b>2018</b> ,	3
1375	Energy-efficient 1.67 V single- and 0.90 V dual-electrolyte based overall water-electrolysis devices enabled by a ZIF-L derived acidBase bifunctional cobalt phosphide nanoarray. <b>2018</b> , 6, 24277-24284	38
1374	Diseño e Implementación de un Sistema de Control para un Electrolizador Alcalino. <b>2018</b> ,	3
1373	Development of nickel-cobalt bimetallic/conducting polymer composite used as a catalyst in the oxygen evolution reaction (OER). <b>2018</b> , 161, 012027	2
1372	Hydrogen Generation by Water Electrolysis. <b>2018</b> ,	9
1371	Hydrogen evolution on Pd modified CoCuZn and CoMnZn cathodes. <b>2018</b> , 43, 22797-22806	8
1370	Investigation of the socio-economic feasibility of installing wind turbines to produce hydrogen: Case study. <b>2018</b> , 43, 23135-23147	26
1369	Spiky Nickel Electrodes for Electrochemical Oxygen Evolution Catalysis by Femtosecond Laser Structuring. <b>2018</b> , 2018, 1-12	5
1368	Hydrogen Production by Membrane Water Splitting Technologies. <b>2018</b> ,	1
1367	A technical and economical assessment of hydrogen production potential from solar energy in Morocco. <b>2018</b> , 43, 22777-22796	44
1366	Electrochemical synthesis of Li-doped NiFeCo oxides for efficient catalysis of the oxygen evolution reaction in an alkaline environment. <b>2018</b> , 43, 21999-22011	13
1365	Electrochemical Preparation and Post-treatment of Composite Porous Foam NiZn Alloy Electrodes with High Activity for Hydrogen Evolution. <b>2018</b> , 8, 15071	7
1364	Recent developments of transition metal phosphides as catalysts in the energy conversion field. <b>2018</b> , 6, 23220-23243	135
1363	Earth-Abundant Electrocatalysts in Proton Exchange Membrane Electrolyzers. <b>2018</b> , 8, 657	27
1362	Recent developments in earth-abundant and non-noble electrocatalysts for water electrolysis. <b>2018</b> , 7, 121-138	119

1361	Mechanism and Kinetics of HER and OER on NiFe LDH Films in an Alkaline Electrolyte. <b>2018</b> , 165, J3395-J3404	48
1360	Evaluation effect of plate electrode characteristics on engine speed performance in application of HHO generator for four-stroke engine. <b>2018</b> ,	1
1359	Hierarchical MoS <sub>2</sub> /Ni <sub>3</sub> S <sub>2</sub> core-shell nanofibers for highly efficient and stable overall-water-splitting in alkaline media. <b>2018</b> , 10, 214-221	11
1358	Self-Supporting Porous CoP-Based Films with Phase-Separation Structure for Ultrastable Overall Water Electrolysis at Large Current Density. <b>2018</b> , 8, 1802445	76
1357	Semi-empirical model and experimental validation for the performance evaluation of a 15 kW alkaline water electrolyzer. <b>2018</b> , 43, 20332-20345	41
1356	Selenium phosphorus co-doped cobalt oxide nanosheets anchored on Co foil: A self-supported and stable bifunctional electrode for efficient electrochemical water splitting. <b>2018</b> , 292, 247-255	13
1355	Overcoming cathode poisoning from electrolyte impurities in alkaline electrolysis by means of self-healing electrocatalyst films. <b>2018</b> , 53, 763-768	2
1354	A comprehensive review of carbon and hydrocarbon assisted water electrolysis for hydrogen production. <b>2018</b> , 231, 502-533	91
1353	Interfacial Electron Transfer of Ni P-NiP Polymorphs Inducing Enhanced Electrochemical Properties. <b>2018</b> , 30, e1803590	200
1352	Open hollow CoPt clusters embedded in carbon nanoflake arrays for highly efficient alkaline water splitting. <b>2018</b> , 6, 20214-20223	29
1351	Three-dimensional porous Ni-CNT composite nanocones as high performance electrocatalysts for hydrogen evolution reaction. <b>2018</b> , 829, 194-207	35
1350	Suppressing buoyant force: New avenue for long-term durability of oxygen evolution catalysts. <b>2018</b> , 54, 184-191	23
1349	Wafer-Scale Fabrication of Ultrathin Flexible Electronic Systems via Capillary-Assisted Electrochemical Delamination. <b>2018</b> , 30, e1805408	25
1348	Two-Dimensional Sandwich-Structured Mesoporous MoC/Carbon/Graphene Nanohybrids for Efficient Hydrogen Production Electrocatalysts. <b>2018</b> , 10, 40800-40807	35
1347	Intermediate-temperature electrolysis of energy grass Miscanthus sinensis for sustainable hydrogen production. <b>2018</b> , 8, 16186	15
1346	g-C <sub>3</sub> N <sub>4</sub> /CeO <sub>2</sub> /Fe <sub>3</sub> O <sub>4</sub> Ternary Composite as an Efficient Bifunctional Catalyst for Overall Water Splitting. <b>2018</b> , 10, 5587-5592	17
1345	N and V Coincorporated Ni Nanosheets for Enhanced Hydrogen Evolution Reaction. <b>2018</b> , 6, 16525-16531	18
1344	Defect Engineering of Cobalt-Based Materials for Electrocatalytic Water Splitting. <b>2018</b> , 6, 15954-15969	107

- 1343 Optimization of physico-chemical parameters of hydrogen production by electrolysis of water. **2018,**
- 1342 Hierarchical Porous Prism Arrays Composed of Hybrid Ni-NiO-Carbon as Highly Efficient Electrocatalysts for Overall Water Splitting. **2018,** 10, 38906-38914 42
- 1341 Data on safe hydrogen production from the solar photovoltaic solar panel through alkaline electrolyser under Algerian climate. **2018,** 21, 1051-1060 5
- 1340 Evidence of the Strong Metal Support Interaction in a Palladium-Ceria Hybrid Electrocatalyst for Enhancement of the Hydrogen Evolution Reaction. **2018,** 165, F1147-F1153 18
- 1339 Impact of Strontium-Substitution on Oxygen Evolution Reaction of Lanthanum Nickelates in Alkaline Solution. **2018,** 165, J3236-J3245 16
- 1338 Electrocatalytic characterization of NiBeTiO<sub>2</sub> overlayers for hydrogen evolution reaction in alkaline solution. **2018,** 1 1
- 1337 Quasi-Amorphous Metallic Nickel Nanopowder as an Efficient and Durable Electrocatalyst for Alkaline Hydrogen Evolution. **2018,** 5, 1801216 22
- 1336 Ultrasmall Ru/Cu-doped RuO Complex Embedded in Amorphous Carbon Skeleton as Highly Active Bifunctional Electrocatalysts for Overall Water Splitting. **2018,** 14, e1803009 104
- 1335 Membrane Electrolysis Assisted Gas Fermentation for Enhanced Acetic Acid Production. **2018,** 6, 16
- 1334 A Highly Conductive and Mechanically Robust OH<sup>-</sup>Conducting Membrane for Alkaline Water Electrolysis. **2018,** 30, 6420-6430 23
- 1333 Hierarchical coral-like FeNi(OH)<sub>x</sub>/Ni via mild corrosion of nickel as an integrated electrode for efficient overall water splitting. **2018,** 39, 1736-1745 26
- 1332 An Intriguing Pea-Like Nanostructure of Cobalt Phosphide on Molybdenum Carbide Incorporated Nitrogen-Doped Carbon Nanosheets for Efficient Electrochemical Water Splitting. **2018,** 11, 3956-3964 40
- 1331 Spherical Ruthenium Disulfide-Sulfur-Doped Graphene Composite as an Efficient Hydrogen Evolution Electrocatalyst. **2018,** 10, 34098-34107 41
- 1330 Síntesis y propiedades de electrodos de níquel/grafeno para generación de hidrógeno. **2018,** 23, 111
- 1329 Earth-Abundant Transition-Metal-Based Electrocatalysts for Water Electrolysis to Produce Renewable Hydrogen. **2018,** 24, 18334-18355 111
- 1328 Green Microalgae as Substrate for Producing Biofuels and Chlorophyll in Biorefineries. **2018,** 439-461 1
- 1327 Hydrogen production from industrial wastewaters: An integrated reverse electrodialysis - Water electrolysis energy system. **2018,** 203, 418-426 26
- 1326 Electrocatalytic Properties of Nickel Foam-Based Ni-Mo, Ni +Mo and Ni+Mo/Ni-Mo Electrodes for Hydrogen Evolution Reaction. **2018,** 921, 134-140 3

1325	Borate-ion intercalated NiFe layered double hydroxide to simultaneously boost mass transport and charge transfer for catalysis of water oxidation. <b>2018</b> , 528, 36-44	34
1324	Ultrathin Amorphous Iron-Nickel Boride Nanosheets for Highly Efficient Electrocatalytic Oxygen Production. <b>2018</b> , 24, 18502-18511	52
1323	Ultrathin Transition Metal Dichalcogenide/3d Metal Hydroxide Hybridized Nanosheets to Enhance Hydrogen Evolution Activity. <b>2018</b> , 30, e1801171	134
1322	NiMo alloy nanostructures as cathodic materials for hydrogen evolution reaction during seawater electrolysis. <b>2018</b> , 72, 1889-1903	18
1321	Water splitting by electrolysis at high current densities under 1.6 volts. <b>2018</b> , 11, 2858-2864	273
1320	Room temperature hydrogen absorption by Mg and Mg TiFe nanocomposites processed by high-energy ball milling. <b>2018</b> , 43, 12251-12259	16
1319	Bimetallic catalysts for green methanol production via CO <sub>2</sub> and renewable hydrogen: a mini-review and prospects. <b>2018</b> , 8, 3450-3464	61
1318	Phase-controlled synthesis and the phase-dependent HER and OER performances of nickel selenide nanosheets prepared by an electrochemical deposition route. <b>2018</b> , 20, 3344-3352	52
1317	Electrodeposited P Co nanoparticles in deep eutectic solvents and their performance in water splitting. <b>2018</b> , 43, 10448-10457	9
1316	Novel single source precursor for synthesis of Sb <sub>2</sub> Se <sub>3</sub> nanorods and deposition of thin films by AACVD: Photo-electrochemical study for water reduction catalysis. <b>2018</b> , 169, 526-534	47
1315	Engineering Morphologies of Cobalt Pyrophosphates Nanostructures toward Greatly Enhanced Electrocatalytic Performance of Oxygen Evolution Reaction. <b>2018</b> , 14, e1801068	31
1314	Depth-Profiling Microanalysis of CoNCN Water-Oxidation Catalyst Using a $\lambda = 46.9$ nm Plasma Laser for Nano-Ionization Mass Spectrometry. <b>2018</b> , 90, 9234-9240	13
1313	Pt and Pt-Ni(OH) Electrodes for the Hydrogen Evolution Reaction in Alkaline Electrolytes and Their Nanoscaled Electrocatalysts. <b>2018</b> , 11, 2643-2653	53
1312	Powerful amorphous mixed metal catalyst for efficient water-oxidation. <b>2018</b> , 9, 247-253	5
1311	Highly active and dual-function self-supported multiphase NiS/NiS <sub>2</sub> /Ni <sub>3</sub> S <sub>2</sub> /NF electrodes for overall water splitting. <b>2018</b> , 6, 14207-14214	64
1310	Synergistic effect: Hierarchical Ni <sub>3</sub> S <sub>2</sub> @Co(OH) <sub>2</sub> heterostructure as efficient bifunctional electrocatalyst for overall water splitting. <b>2018</b> , 457, 156-163	46
1309	Magnetic-field-induced rapid synthesis of defect-enriched Ni-Co nanowire membrane as highly efficient hydrogen evolution electrocatalyst. <b>2018</b> , 51, 349-357	47
1308	Engineering nanoporous Ag/Pd core/shell interfaces with ultrathin Pt doping for efficient hydrogen evolution reaction over a wide pH range. <b>2018</b> , 6, 14281-14290	28

1307	High-performance bifunctional porous non-noble metal phosphide catalyst for overall water splitting. <b>2018</b> , 9, 2551	566
1306	Modeling and operation of the power-to-gas system for renewables integration: a review. <b>2018</b> , 4, 168-178	31
1305	References. <b>2018</b> , 87-98	
1304	Efficient hydrogen evolution performance of phase-pure NiS electrocatalysts grown on fluorine-doped tin oxide-coated glass by facile chemical bath deposition. <b>2018</b> , 43, 13022-13031	9
1303	Influence of Temperature and Electrolyte Concentration on the Structure and Catalytic Oxygen Evolution Activity of Nickel-Iron Layered Double Hydroxide. <b>2018</b> , 24, 13773-13777	35
1302	Mathematical modeling and simulation for external electrothermal characteristics of an alkaline water electrolyzer. <b>2018</b> , 42, 3899-3914	8
1301	Multicomponent electrocatalyst with ultralow Pt loading and high hydrogen evolution activity. <b>2018</b> , 3, 773-782	330
1300	Enhancing the catalytic activity of the alkaline hydrogen evolution reaction by tuning the S/Se ratio in the Mo(SSe) catalyst. <b>2018</b> , 10, 16211-16216	25
1299	Intensified hydrogen production and desulfurization at elevated temperature and pressure during coal electrolysis. <b>2018</b> , 284, 560-568	13
1298	Nanostructured Ni <sub>2</sub> N thin films magnetron-sputtered on nickel foam as efficient electrocatalyst for hydrogen evolution reaction. <b>2018</b> , 229, 148-151	9
1297	Enhancement of microalga Haematococcus pluvialis growth and astaxanthin production by electrical treatment. <b>2018</b> , 268, 815-819	27
1296	Carbon-Rich Nanomaterials: Fascinating Hydrogen and Oxygen Electrocatalysts. <b>2018</b> , 30, e1800528	102
1295	The Electrochemical Conversion of Carbon Dioxide to Carbon Monoxide Over Nanomaterial Based Cathodic Systems: Measures to Take to Apply This Laboratory Process Industrially. <b>2018</b> , 83-131	1
1294	In-situ synthesis of carbon-coated NiS nanocrystals for hydrogen evolution reaction in both acidic and alkaline solution. <b>2018</b> , 43, 16061-16067	8
1293	Electrodeposition of nano-nickel in deep eutectic solvents for hydrogen evolution reaction in alkaline solution. <b>2018</b> , 43, 15673-15686	27
1292	Review of electrical energy storage technologies, materials and systems: challenges and prospects for large-scale grid storage. <b>2018</b> , 11, 2696-2767	865
1291	Hydrogenation of m-Chloronitrobenzene over Different Morphologies Ni/TiO <sub>2</sub> without Addition of Molecular Hydrogen. <b>2018</b> , 8, 182	2
1290	Design and Simulation of a Powertrain System for a Fuel Cell Extended Range Electric Golf Car. <b>2018</b> , 11, 1766	5

1289	Engineering Two-Dimensional Mass-Transport Channels of the MoS Nanocatalyst toward Improved Hydrogen Evolution Performance. <b>2018</b> , 10, 25409-25414	17
1288	Carbon-based Electrocatalysts for Water-splitting. <b>2018</b> , 459-483	1
1287	Controlling the redox properties of nickel in NiO/ZrO <sub>2</sub> catalysts synthesized by sol-gel. <b>2018</b> , 8, 4070-4082	10
1286	Analysis of Trends and Emerging Technologies in Water Electrolysis Research Based on a Computational Method: A Comparison with Fuel Cell Research. <b>2018</b> , 10, 478	30
1285	Hollow nanoparticles as emerging electrocatalysts for renewable energy conversion reactions. <b>2018</b> , 47, 8173-8202	157
1284	Formation of Yolk-Shelled Nickel-Cobalt Selenide Dodecahedral Nanocages from Metal-Organic Frameworks for Efficient Hydrogen and Oxygen Evolution. <b>2018</b> , 6, 10952-10959	80
1283	Thermodynamic analysis of polygeneration systems based on catalytic hydrolysis for the production of bio-oil and fuels. <b>2018</b> , 171, 1617-1638	13
1282	Bifunctionality from Synergy: CoP Nanoparticles Embedded in Amorphous CoO <sub>x</sub> Nanoplates with Heterostructures for Highly Efficient Water Electrolysis. <b>2018</b> , 5, 1800514	71
1281	Sulfur-Doped Nickel Phosphide Nanoplates Arrays: A Monolithic Electrocatalyst for Efficient Hydrogen Evolution Reactions. <b>2018</b> , 10, 26303-26311	62
1280	MoS <sub>2</sub> -modified porous gas diffusion layer with air-solid-liquid interface for efficient electrocatalytic water splitting. <b>2018</b> , 10, 15324-15331	12
1279	Oxygen Evolution Activity and Chemical Stability of Ni and Fe Based Perovskites in Alkaline Media. <b>2018</b> , 165, F827-F835	13
1278	Catalysis by design: development of a bifunctional water splitting catalyst through an operando measurement directed optimization cycle. <b>2018</b> , 9, 5322-5333	46
1277	A sea-change: manganese doped nickel/nickel oxide electrocatalysts for hydrogen generation from seawater. <b>2018</b> , 11, 1898-1910	106
1276	Study of oxygen evolution reaction on amorphous Au@NiP nanocluster. <b>2018</b> , 20, 14545-14556	5
1275	Design, fabrication and performance evaluation of a printed-circuit-board microfluidic electrolytic pump for lab-on-a-chip devices. <b>2018</b> , 277, 73-84	13
1274	Pulsed current water splitting electrochemical cycle for hydrogen production. <b>2018</b> , 43, 10240-10248	16
1273	Electrolyzed Water Application in Fresh Produce Sanitation. <b>2018</b> , 67-89	6
1272	Synergistic Coupling of Metallic Cobalt Nitride Nanofibers and IrO <sub>x</sub> Nanoparticle Catalysts for Stable Oxygen Evolution. <b>2018</b> , 30, 5941-5950	37

1271	Selective Electrocatalytic Reduction of CO <sub>2</sub> into CO at Small, Thiol-Capped Au/Cu Nanoparticles. <b>2018</b> , 122, 27991-28000	30
1270	Reactive diffusion migration layer and mass transfer wall function to model active chlorine generation in a filter press type electrochemical reactor for organic pollutant degradation. <b>2018</b> , 138, 533-545	11
1269	Effect of pulse potential on alkaline water electrolysis performance. <b>2018</b> , 43, 17013-17020	13
1268	Doped-MoSe <sub>2</sub> Nanoflakes/3d Metal OxideHydr(Oxy)Oxides Hybrid Catalysts for pH-Universal Electrochemical Hydrogen Evolution Reaction. <b>2018</b> , 8, 1801764	50
1267	Recent progress on earth abundant electrocatalysts for oxygen evolution reaction (OER) in alkaline medium to achieve efficient water splitting [A review]. <b>2018</b> , 400, 31-68	279
1266	Toward Tailoring of Electrolyte Additives for Efficient Alkaline Water Electrolysis: Salicylate-Based Ionic Liquids. <b>2018</b> , 1, 4731-4742	2
1265	A review of the synthesis and characterization of anion exchange membranes. <b>2018</b> , 53, 11131-11150	130
1264	In Situ Grown Bimetallic MOF-Based Composite as Highly Efficient Bifunctional Electrocatalyst for Overall Water Splitting with Ultrastability at High Current Densities. <b>2018</b> , 8, 1801065	168
1263	Enhanced catalytic activity of electrodeposited Ni-Cu-P toward oxygen evolution reaction. <b>2018</b> , 237, 409-415	78
1262	Nickel-cobalt-oxide cathodes for hydrogen production by water electrolysis in acidic and alkaline media. <b>2018</b> , 43, 12917-12928	23
1261	The carbon credentials of hydrogen gas networks and supply chains. <b>2018</b> , 91, 1077-1088	24
1260	Electrochemical C-H Cyanation of Electron-Rich (Hetero)Arenes. <b>2018</b> , 24, 11288-11291	30
1259	4.25 Electrolyzers. <b>2018</b> , 985-1025	3
1258	Performance of water gas shift reaction catalysts: A review. <b>2018</b> , 93, 549-565	154
1257	Porous CoS/Nitrogen, Sulfur-Doped Carbon@MoC Dual Catalyst for Efficient Water Splitting. <b>2018</b> , 10, 22291-22302	66
1256	Up-conversion processes in Ln(III)-doped luminescent materials for photovoltaics and photocatalysis. <b>2018</b> , 291-333	1
1255	Capacitive mechanism of oxygen functional groups on carbon surface in supercapacitors. <b>2018</b> , 282, 618-625	146
1254	Asymmetric 3d Electronic Structure for Enhanced Oxygen Evolution Catalysis. <b>2018</b> , 10, 23131-23139	40

1253	Role of Boron and Phosphorus in Enhanced Electrocatalytic Oxygen Evolution by Nickel Borides and Nickel Phosphides. <b>2019</b> , 6, 235-240	38
1252	Alcoholic Compounds as an Efficient Energy Carrier. <b>2019</b> , 387-417	1
1251	Nanocarbons and Their Composite Materials as Electrocatalyst for Metal-Air Battery and Water Splitting. <b>2019</b> , 455-496	
1250	Recent progress in functionalized layered double hydroxides and their application in efficient electrocatalytic water oxidation. <b>2019</b> , 32, 93-104	47
1249	New Way to Synthesize Robust and Porous NiFe Layered Double Hydroxide for Efficient Electrocatalytic Oxygen Evolution. <b>2019</b> , 11, 32909-32916	10
1248	Hierarchical Nickel Clusters Encapsulated in Ultrathin N-doped Graphitic Nanocarbon Hybrids for Effective Hydrogen Evolution Reaction. <b>2019</b> , 7, 15127-15136	15
1247	Superaerophobic Quaternary NiCoBP Nanoparticles for Efficient Overall Water-Splitting. <b>2019</b> , 7, 14639-14646	30
1246	Oxygen evolution behaviours of novel porous $Mn_xSi_y$ electrodes for metal electrowinning. <b>2019</b> , 6, 106533	
1245	Bi-metallic MOFs possessing hierarchical synergistic effects as high performance electrocatalysts for overall water splitting at high current densities. <b>2019</b> , 258, 118023	70
1244	Surface modification of Ni foam by the dendrite Ni-Cu electrode for hydrogen evolution reaction in an alkaline solution. <b>2019</b> , 848, 113350	11
1243	Hydrogen Bubble Templating of Fractal Ni Catalysts for Water Oxidation in Alkaline Media. <b>2019</b> , 2, 5734-5743	9
1242	Ultrafine Defective RuO <sub>2</sub> Electrocatalyst Integrated on Carbon Cloth for Robust Water Oxidation in Acidic Media. <b>2019</b> , 9, 1901313	95
1241	Molybdenum-Doped Porous Cobalt Phosphide Nanosheets for Efficient Alkaline Hydrogen Evolution. <b>2019</b> , 2, 6302-6310	12
1240	Electronic-reconstruction-enhanced hydrogen evolution catalysis in oxide polymorphs. <b>2019</b> , 10, 3149	20
1239	Composite Membranes for High Temperature PEM Fuel Cells and Electrolysers: A Critical Review. <b>2019</b> , 9,	68
1238	Hydrogen Production via Load-Matched Coupled Solar-Proton Exchange Membrane Electrolysis Using Aqueous Methanol. <b>2019</b> , 42, 2340-2347	2
1237	Ruthenium and cobalt bimetal encapsulated in nitrogen-doped carbon material derived of ZIF-67 as enhanced hydrogen evolution electrocatalyst. <b>2019</b> , 494, 101-110	22
1236	Atomic structure of Ni-Nb-Y amorphous alloys and water-surface adsorption characteristics. <b>2019</b> , 169, 109095	2

1235	P-Doped Iron-Nickel Sulfide Nanosheet Arrays for Highly Efficient Overall Water Splitting. <b>2019</b> , 11, 27667-27686		
1234	Powering the Hydrogen Economy from Waste Heat: A Review of Heat-to-Hydrogen Concepts. <b>2019</b> , 12, 3882-3895		23
1233	Boosting Hydrogen Production by Electrooxidation of Urea over 3D Hierarchical Ni <sub>4</sub> N/Cu <sub>3</sub> N Nanotube Arrays. <b>2019</b> , 7, 13278-13285		44
1232	Ion-solvating membranes as a new approach towards high rate alkaline electrolyzers. <b>2019</b> , 12, 3313-3318		71
1231	Polymorph nickel titanate nanofibers as bifunctional electrocatalysts towards hydrogen and oxygen evolution reactions. <b>2019</b> , 48, 12684-12698		8
1230	On the use of 3-D electrodes and pulsed voltage for the process intensification of alkaline water electrolysis. <b>2019</b> , 44, 29432-29440		6
1229	Extreme thermophilic condition: An alternative for long-term biohydrogen production from sugarcane vinasse. <b>2019</b> , 44, 22876-22887		18
1228	Introduction to Single-Atom Catalysis. <b>2019</b> , 1-20		4
1227	Solar fuels production: Two-step thermochemical cycles with cerium-based oxides. <i>Progress in Energy and Combustion Science</i> , <b>2019</b> , 75, 100785	33.6	60
1226	Porous electrode improving energy efficiency under electrode-normal magnetic field in water electrolysis. <b>2019</b> , 44, 22780-22786		17
1225	Improved photoelectrocatalytic effect of Co(II) and Fe(III) mixed porphyrins on graphite paste electrodes towards hydrogen evolution reaction. <b>2019</b> , 43, 12727-12733		6
1224	Preparation and Characterization of Nanocrystalline TiO <sub>2</sub> on Microsericite for High-Efficiency Photo-Energy Conversion of Methanol to Hydrogen. <b>2019</b> , 9, 380		4
1223	Recent advances in methods and technologies for enhancing bubble detachment during electrochemical water splitting. <b>2019</b> , 114, 109300		74
1222	Selectivity Trends Between Oxygen Evolution and Chlorine Evolution on Iridium-Based Double Perovskites in Acidic Media. <b>2019</b> , 9, 8561-8574		44
1221	Recent Advances in Power-to-X Technology for the Production of Fuels and Chemicals. <b>2019</b> , 7, 392		58
1220	Enhancement of Oxygen Evolution Activity of Nickel Oxyhydroxide by Electrolyte Alkali Cations. <b>2019</b> , 131, 13133-13137		19
1219	Formation of hierarchical Ni <sub>3</sub> S <sub>2</sub> nanohorn arrays driven by in-situ generation of VS <sub>4</sub> nanocrystals for boosting alkaline water splitting. <b>2019</b> , 257, 117911		57
1218	Integration of hydrogenation and dehydrogenation system for hydrogen storage and electricity generation [Simulation study]. <b>2019</b> , 44, 20213-20222		12

1217	Disordered CoFePi nanosheets with rich vacancies as oxygen evolving electrocatalysts: Insight into the local atomic environment. <b>2019</b> , 427, 215-222	22
1216	Design of Multi-Metallic-Based Electrocatalysts for Enhanced Water Oxidation. <b>2019</b> , 20, 2936-2945	31
1215	Hybrid energy systems for off-grid power supply and hydrogen production based on renewable energy: A techno-economic analysis. <b>2019</b> , 196, 1068-1079	89
1214	Surface-Electron Coupling for Efficient Hydrogen Evolution. <b>2019</b> , 131, 17873-17881	8
1213	Atomic Arrangement in Metal-Doped NiS Boosts the Hydrogen Evolution Reaction in Alkaline Media. <b>2019</b> , 58, 18676-18682	103
1212	In Situ Transmission Electron Microscopy Study of Nanocrystal Formation for Electrocatalysis. <b>2019</b> , 5, 1439-1455	7
1211	Flexible gold nanoparticles/rGO and thin film/rGO papers: novel electrocatalysts for hydrogen evolution reaction. <b>2019</b> , 94, 3895-3904	13
1210	Electrodeposition of cedar leaf-like graphene Oxide@NiCu@Ni foam electrode as a highly efficient and ultra-stable catalyst for hydrogen evolution reaction. <b>2019</b> , 326, 134949	23
1209	Straight-Parallel Electrodes and Variable Gap for Hydrogen and Oxygen Evolution Reactions. <b>2019</b> , 2019, 1-11	2
1208	Recent Trends in Synthesis and Investigation of Nickel Phosphide Compound/Hybrid-Based Electrocatalysts Towards Hydrogen Generation from Water Electrocatalysis. <b>2019</b> , 377, 29	17
1207	In Situ Modified Nitrogen-Enriched ZIF-67 Incorporated ZIF-7 Nanofiber: An Unusual Electrocatalyst for Water Oxidation. <b>2019</b> , 58, 13826-13835	25
1206	Design of alkaline electrolyser for integration in diesel engines to reduce pollutants emission. <b>2019</b> , 44, 25277-25286	11
1205	Wrapping Multiwalled Carbon Nanotubes with Anatase Titanium Oxide for the Electrosynthesis of Glycolic Acid. <b>2019</b> , 2, 6360-6367	4
1204	Crystal structure of Mo-substituted lanthanum tungstate $\text{La}_{5.4}\text{W}_{10}\text{Mo}_y\text{O}_{12}\text{O}(\text{y} \approx 0.2)$ studied by X-ray and neutron diffraction. <b>2019</b> , 52, 1043-1053	2
1203	Low-Cost Nanostructured Electrocatalysts for Hydrogen Evolution in an Anion Exchange Membrane Lignin Electrolysis Cell. <b>2019</b> , 166, F1037-F1046	12
1202	Surface-Electron Coupling for Efficient Hydrogen Evolution. <b>2019</b> , 58, 17709-17717	28
1201	Switching of Kinetically Relevant Reactants for the Aqueous Cathodic Process Determined by Mass-transport Coupled with Protolysis. <b>2019</b> , 11, 5961-5968	6
1200	Advanced $\text{Co}_3\text{O}_4/\text{CuO}$ nano-composite based electrocatalyst for efficient hydrogen evolution reaction in alkaline media. <b>2019</b> , 44, 26148-26157	34

- 1199 Polyoxometalate-based materials for sustainable and clean energy conversion and storage. **2019**, 1, 100021 109
- 1198 Simple and Precise Approach for Determination of Ohmic Contribution of Diaphragms in Alkaline Water Electrolysis. **2019**, 9, 17
- 1197 Solar Water Splitting with Perovskite/Silicon Tandem Cell and TiC-Supported Pt Nanocluster Electrocatalyst. **2019**, 3, 2930-2941 49
- 1196 Hierarchical Urchin-like Spinel  $Cu_xCo_{3-x}O_4$  Particles as Oxygen Evolution Reaction Catalysts in Alkaline Medium. **2019**, 617, 012004 4
- 1195 One-Step Controllable Synthesis of Catalytic  $Ni_4Mo/MoO_x/Cu$  Nanointerfaces for Highly Efficient Water Reduction. **2019**, 9, 1901454 20
- 1194 Atomic Arrangement in Metal-Doped  $NiS_2$  Boosts the Hydrogen Evolution Reaction in Alkaline Media. **2019**, 131, 18849-18855 20
- 1193 Novel alkaline water electrolysis with nickel-iron gas diffusion electrode for oxygen evolution. **2019**, 44, 29862-29875 13
- 1192 Interstitial Hydrogen Atom Modulation to Boost Hydrogen Evolution in Pd-Based Alloy Nanoparticles. **2019**, 13, 12987-12995 36
- 1191 Ni Nanoparticles on Ultrathin  $Mo_2C$  Interconnected Nanonet: An Efficient 3D Hydrogen-Evolving Electrocatalyst with Superior Durability. **2019**, 166, F1128-F1133 2
- 1190 Modeling and energy demand analysis of a scalable green hydrogen production system. **2019**, 44, 30237-30255 21
- 1189 High Performance Anion Exchange Membrane Electrolysis Using Plasma-Sprayed, Non-Precious-Metal Electrodes. **2019**, 2, 7903-7912 38
- 1188 Heat to  $H_2$ : Using Waste Heat for Hydrogen Production through Reverse Electrodialysis. **2019**, 12, 3428 13
- 1187 MOF-Derived Ni-Doped  $CoS_2$  Grown on Carbon Fiber Paper for Efficient Oxygen Evolution Reaction. **2019**, 6, 1206-1212 25
- 1186 Unusual synergistic effect in layered Ruddlesden-Popper oxide enables ultrafast hydrogen evolution. **2019**, 10, 149 116
- 1185 A new class of bubble-free water electrolyzer that is intrinsically highly efficient. **2019**, 44, 23568-23579 10
- 1184 Iridium on vertical graphene as an all-round catalyst for robust water splitting reactions. **2019**, 7, 20590-20596 31
- 1183 Electrochemical hydrogen generation. **2019**, 299-317 8
- 1182 Facile electrodeposition of three-dimensional flower-like structure of nickel matrix composite electrodes for hydrogen evolution reaction. **2019**, 498, 143768 9

1181	Investigate the Role of Different Inherent Minerals in PEM Based Coal Assisted Water Electrolysis Cell. <b>2019</b> , 166, F949-F955	12
1180	Islanded ammonia power systems: Technology review & conceptual process design. <b>2019</b> , 114, 109339	76
1179	Role of Hydroxyl Species in Hydrogen Oxidation Reaction: A DFT Study. <b>2019</b> , 123, 23931-23939	21
1178	C-CoP hollow microporous nanocages based on phosphating regulation: a high-performance bifunctional electrocatalyst for overall water splitting. <b>2019</b> , 11, 17084-17092	30
1177	Removal of Organic Compounds Found in the Wastewater through Electrochemical Advanced Oxidation Processes: A Review. <b>2019</b> , 55, 591-620	18
1176	Oxygen reduction/evolution activity of air electrodes using nitrogen-doped and perovskite-type oxide-loaded reduced graphene oxides. <b>2019</b> , 49, 1055-1067	3
1175	Ni foam-supported NiCoP nanosheets as bifunctional electrocatalysts for efficient overall water splitting. <b>2019</b> , 40, 1405-1407	7
1174	Se-incorporated Cu-based sulfide nanoparticles for enhanced hydrogen evolution. <b>2019</b> ,	
1173	Hydrophobic Gas Transfer Membranes for Wastewater Treatment and Resource Recovery. <b>2019</b> , 53, 11618-11635	36
1172	Template-Directed Bifunctional Dodecahedral CoP/CN@MoS Electrode for High Efficient Water Splitting. <b>2019</b> , 11, 36649-36657	45
1171	Effects of iron doping on the hydrogen evolution reaction performance of self-supported nickel selenides. <b>2019</b> , 14, 102522	5
1170	Electrochemical performance of catalyst couples M/stainless steel 430 (M: Ni, Co, and Cu) for the hydrogen production in KOH electrolyte. <b>2019</b> , 23, 2961-2968	1
1169	Nanostructured Ni Based Anode and Cathode for Alkaline Water Electrolyzers. <b>2019</b> , 12, 3669	7
1168	The Performance of Nickel and Nickel-Iron Catalysts Evaluated As Anodes in Anion Exchange Membrane Water Electrolysis. <b>2019</b> , 9, 814	35
1167	Application of a deep eutectic solvent to prepare nanocrystalline Ni and Ni/TiO <sub>2</sub> coatings as electrocatalysts for the hydrogen evolution reaction. <b>2019</b> , 44, 24604-24616	28
1166	In-situ monitoring of hydrogen absorption into Ni thin film electrodes during alkaline water electrolysis. <b>2019</b> , 322, 134752	3
1165	Recent Advances and Prospective in Ruthenium-Based Materials for Electrochemical Water Splitting. <b>2019</b> , 9, 9973-10011	269
1164	Self-repairing hybrid nanosheet anode catalysts for alkaline water electrolysis connected with fluctuating renewable energy. <b>2019</b> , 323, 134812	12

- 1163 NiS<sub>2</sub>/MoS<sub>2</sub> on carbon cloth as a bifunctional electrocatalyst for overall water splitting. **2019**, 326, 134983 26
- 1162 Bacterial protein for food and feed generated via renewable energy and direct air capture of CO<sub>2</sub>: Can it reduce land and water use?. **2019**, 22, 25-32 39
- 1161 Solar-driven novel methane reforming with carbon looping for hydrogen production. **2019**, 44, 24441-24449 14
- 1160 Electrochemical investigation of novel reference electrode Ni/Ni(OH)<sub>2</sub> in comparison with silver and platinum inert quasi-reference electrodes for electrolysis in eutectic molten hydroxide. **2019**, 44, 27224-27236<sup>45</sup>
- 1159 Graphitic Carbon Nitride Materials for Photocatalytic Hydrogen Production via Water Splitting: A Short Review. **2019**, 9, 805 26
- 1158 Two-dimensional Cobalt Oxy-hydrate Sulfide Nanosheets with Modified t<sub>2g</sub> Orbital State of CoO<sub>6</sub> Octahedron for Efficient Overall Water Splitting. **2019**, 7, 17325-17334 7
- 1157 3D porous Ni-Co-P nanosheets on carbon fiber cloth for efficient hydrogen evolution reaction. **2019**, 300, 217-224 32
- 1156 Sustainable synthesis of nitrogen-doped porous carbon with improved electrocatalytic performance for hydrogen evolution. **2019**, 43, 3078-3083 9
- 1155 Enhancement of alkaline water splitting activity by Co-P coating on a copper oxide nanowire. **2019**, 48, 891-897 10
- 1154 Size dependence of bubble wetting on surfaces: breakdown of contact angle match between small sized bubbles and droplets. **2019**, 11, 2823-2828 13
- 1153 Electrochemically activated cobalt nickel sulfide for an efficient oxygen evolution reaction: partial amorphization and phase control. **2019**, 7, 3592-3602 51
- 1152 Recent advances in layered double hydroxide electrocatalysts for the oxygen evolution reaction. **2019**, 7, 5069-5089 254
- 1151 Constructing Earth-abundant 3D Nanoarrays for Efficient Overall Water Splitting |A Review. **2019**, 11, 1550-1575 76
- 1150 Sodium-ion electrochemical tuning of Prussian blue analog as an efficient oxygen evolution catalyst. **2019**, 12, 71-77 6
- 1149 Metallization of 3D Printed Polymers and Their Application as a Fully Functional Water-Splitting System. **2019**, 6, 1801670 32
- 1148 Towards a sustainable technology for H<sub>2</sub> production: Direct lignin electrolysis in a continuous-flow Polymer Electrolyte Membrane reactor. **2019**, 100, 43-47 36
- 1147 Synthesis of hexagonal WO<sub>3</sub> nanocrystals with various morphologies and their enhanced electrocatalytic activities toward hydrogen evolution. **2019**, 44, 4724-4736 20
- 1146 Membrane free water electrolysis under 1.23 V with Ni<sub>3</sub>Se<sub>4</sub>/Ni anode in alkali and Pt cathode in acid. **2019**, 478, 784-792 22

1145	Extremely Active Hydrogen Evolution Catalyst Electrochemically Generated from a Ruthenium-Based Perovskite-Type Precursor. <b>2019</b> , 2, 956-960	19
1144	Influence of Surface Treatment on the Kinetics of the Hydrogen Evolution Reaction on Bulk and Porous Nickel Materials. <b>2019</b> , 10, 173-183	8
1143	Layered and two dimensional metal oxides for electrochemical energy conversion. <b>2019</b> , 12, 41-58	204
1142	Direct observation of active catalyst surface phases and the effect of dynamic self-optimization in NiFe-layered double hydroxides for alkaline water splitting. <b>2019</b> , 12, 572-581	240
1141	High-performance oxygen evolution electrocatalysis by boronized metal sheets with self-functionalized surfaces. <b>2019</b> , 12, 684-692	110
1140	In situ nitridated porous nanosheet networked Co <sub>3</sub> O <sub>4</sub> @Co <sub>4</sub> N heteronanostructures supported on hydrophilic carbon cloth for highly efficient electrochemical hydrogen evolution. <b>2019</b> , 7, 775-782	39
1139	Recent progress in the hybrids of transition metals/carbon for electrochemical water splitting. <b>2019</b> , 7, 14380-14390	68
1138	Prompt Electrodeposition of Ni Nanodots on Ni Foam to Construct a High-Performance Water-Splitting Electrode: Efficient, Scalable, and Recyclable. <b>2019</b> , 11, 41	10
1137	Hierarchical Bulk Nanoporous Aluminum for On-Site Generation of Hydrogen by Hydrolysis in Pure Water and Combustion of Solid Fuels. <b>2019</b> , 7, 11194-11204	27
1136	Self-Supported Ni/NiSP <sub>x</sub> Microdendrite Structure for Highly Efficient and Stable Overall Water Splitting in Simulated Industrial Environment. <b>2019</b> , 7, 11778-11786	12
1135	Enhanced overall water electrolysis on a bifunctional perovskite oxide through interfacial engineering. <b>2019</b> , 318, 120-129	23
1134	Gas bubble removal in alkaline water electrolysis with utilization of pressure swings. <b>2019</b> , 319, 148-157	11
1133	Cobalt phosphide nanocage@ferric-zinc mixed-metal phosphide nanotube hierarchical nanocomposites for enhanced overall water splitting. <b>2019</b> , 40, 1085-1092	13
1132	High performance of CoB/NF electrocatalyst for oxygen evolution reaction. <b>2019</b> , 235, 121772	7
1131	Recent progress made in the mechanism comprehension and design of electrocatalysts for alkaline water splitting. <b>2019</b> , 12, 2620-2645	532
1130	Enhancement of Oxygen Evolution Activity of Nickel Oxyhydroxide by Electrolyte Alkali Cations. <b>2019</b> , 58, 12999-13003	99
1129	Electrochemical characterization of manganese oxides as a water oxidation catalyst in proton exchange membrane electrolyzers. <b>2019</b> , 6, 190122	11
1128	A Cobalt-Based Amorphous Bifunctional Electrocatalysts for Water-Splitting Evolved from a Single-Source Lazulite Cobalt Phosphate. <b>2019</b> , 29, 1808632	105

1127	Perspectives on Low-Temperature Electrolysis and Potential for Renewable Hydrogen at Scale. <b>2019</b> , 10, 219-239	118
1126	A Critical Look at Direct Catalytic Hydrogenation of Carbon Dioxide to Olefins. <b>2019</b> , 12, 3896-3914	71
1125	Direct magnetic enhancement of electrocatalytic water oxidation in alkaline media. <b>2019</b> , 4, 519-525	199
1124	Structure design and control strategy of a new alkaline water electrolyzer based on heat exchange. <b>2019</b> , 43, 4729-4742	2
1123	Production of biohydrogen from gasification of waste fuels: Pilot plant results and deployment prospects. <b>2019</b> , 94, 95-106	15
1122	Correlating the Short-Time Current Response of a Hydrogen Evolving Nickel Electrode to Bubble Growth. <b>2019</b> , 166, E280-E285	8
1121	High-efficiency bifunctional electrocatalyst based on 3D freestanding Cu foam in situ armored CoNi alloy nanosheet arrays for overall water splitting. <b>2019</b> , 427, 184-193	28
1120	Functionalization and Defect-Driven Water Splitting Mechanism on a Quasi-Two-Dimensional TiO <sub>2</sub> Hexagonal Nanosheet. <b>2019</b> , 2, 5074-5082	4
1119	Electrosynthesis of high-entropy metallic glass nanoparticles for designer, multi-functional electrocatalysis. <b>2019</b> , 10, 2650	138
1118	3D Self-Supported Porous NiO@NiMoO <sub>4</sub> Core-Shell Nanosheets for Highly Efficient Oxygen Evolution Reaction. <b>2019</b> , 58, 6758-6764	17
1117	An efficient bifunctional electrocatalyst based on a nickel iron layered double hydroxide functionalized Co <sub>3</sub> O <sub>4</sub> core shell structure in alkaline media. <b>2019</b> , 9, 2879-2887	19
1116	Ordered Mesoporous Metastable NiMoO <sub>4</sub> with Enhanced Water Dissociation Capability for Boosting Alkaline Hydrogen Evolution Activity. <b>2019</b> , 29, 1901217	48
1115	General synthesis of NiCo alloy nanochain arrays with thin oxide coating: a highly efficient bifunctional electrocatalyst for overall water splitting. <b>2019</b> , 797, 1216-1223	27
1114	Recent advances in transition metal-based electrocatalysts for alkaline hydrogen evolution. <b>2019</b> , 7, 14971-15005	281
1113	Fuzzy-inference-based failure mode and effects analysis of the hydrogen production process using Thermococcus onnurineus NA1. <b>2019</b> , 44, 13135-13146	3
1112	Fe <sub>3</sub> C-Co Nanoparticles Encapsulated in a Hierarchical Structure of N-Doped Carbon as a Multifunctional Electrocatalyst for ORR, OER, and HER. <b>2019</b> , 29, 1901949	136
1111	High-valence-state manganate(V) Ba <sub>3</sub> Mn <sub>2</sub> O <sub>8</sub> as an efficient anode of a proton-conducting solid oxide steam electrolyzer. <b>2019</b> , 6, 1587-1597	3
1110	Respective influence of stoichiometry and NiOOH formation in hydrogen and oxygen evolution reactions of nickel selenides. <b>2019</b> , 487, 1152-1158	30

1109	Improving the Stability of DSA Electrodes by the Addition of TiO <sub>2</sub> Nanoparticles. <b>2019</b> , 166, E248-E251	10
1108	Ultra-Small Molybdenum Carbide Nanoparticles in situ Entrapped in Mesoporous Carbon Spheres as Efficient Catalysts for Hydrogen Evolution. <b>2019</b> , 11, 2643-2648	12
1107	Simulation and characterization of hydrogen evolution reaction on porous Ni Cu electrode using surface response methodology. <b>2019</b> , 44, 13296-13309	15
1106	The versatility of copper tin sulfide. <b>2019</b> , 7, 17118-17182	29
1105	Look Better: Single Atoms in Chemistry and Single Atoms in Physics. <b>2019</b> , 20, 1553-1558	
1104	Advances in alkaline water electrolyzers: A review. <b>2019</b> , 23, 392-403	144
1103	One-step electrodeposition of cauliflower-like Co <sub>2</sub> Ni <sub>3</sub> S <sub>4</sub> @polypyrrole electrocatalysts on carbon fiber paper for hydrogen evolution reaction. <b>2019</b> , 44, 12931-12940	6
1102	An important parameter for synthesis of Al <sub>2</sub> O <sub>3</sub> supported Cu-Zn catalysts in low-temperature water-gas shift reaction under practical reaction condition. <b>2019</b> , 44, 14853-14860	16
1101	Microwave-Assisted Synthesis of Co/CoO <sub>x</sub> Supported on Earth-Abundant Coal-Derived Carbon for Electrocatalysis of Oxygen Evolution. <b>2019</b> , 166, F479-F486	11
1100	Influence of Sn Content, Nanostructural Morphology, and Synthesis Temperature on the Electrochemical Active Area of Ni-Sn/C Nanocomposite: Verification of Methanol and Urea Electrooxidation. <b>2019</b> , 9, 330	16
1099	Design of a Zero-Gap Laboratory-Scale Polymer Electrolyte Membrane Alkaline Water Electrolysis Stack. <b>2019</b> , 91, 821-832	8
1098	Non-Precious Electrodes for Practical Alkaline Water Electrolysis. <b>2019</b> , 12,	44
1097	NiN/NF as Bifunctional Catalysts for Both Hydrogen Generation and Urea Decomposition. <b>2019</b> , 11, 13168-13175	15
1096	Synergistic Catalytic Effect of Inherent Minerals and Specific Structures on the Steam Gasification of Lignite and Anthracite. <b>2019</b> , 1-17	1
1095	Nickel Nanocrystal Assemblies as Efficient Electrocatalysts for Hydrogen Evolution from pH-Neutral Aqueous Solution. <b>2019</b> , 6, 2100-2106	11
1094	Searching General Sufficient-and-Necessary Conditions for Ultrafast Hydrogen-Evolving Electrocatalysis. <b>2019</b> , 29, 1900704	65
1093	Künstliche Photosynthese: Eine Analyse in Teilprozessen. <b>2019</b> , 97-127	
1092	Overpotential analysis of alkaline and acidic alcohol electrolyzers and optimized membrane-electrode assemblies. <b>2019</b> , 44, 10163-10173	3

1091	Metal-Supported Solid Oxide Electrolysis Cell with Significantly Enhanced Catalysis. <b>2019</b> , 7, 1801154	14
1090	Metallic Ni nanocatalyst in situ formed from LaNi <sub>5</sub> H <sub>5</sub> toward efficient CO <sub>2</sub> methanation. <b>2019</b> , 44, 29068-29078	10
1089	A Powder Metallurgy Route to Produce Raney-Nickel Electrodes for Alkaline Water Electrolysis. <b>2019</b> , 166, F357-F363	6
1088	Hybrid Films of Ni(OH) <sub>2</sub> Nanowall Networks on Reduced Graphene Oxide Prepared at a Liquid/Liquid Interface for Oxygen Evolution and Supercapacitor Applications. <b>2019</b> , 4, 2519-2528	10
1087	The economic feasibility study of a 100-MW Power-to-Gas plant. <b>2019</b> , 44, 20978-20986	20
1086	Effect of Temperature on the Performance of Polymer Electrolyte Membrane Water Electrolysis: Numerical Analysis of Electrolysis Voltage Considering Gas/Liquid Two-Phase Flow. <b>2019</b> , 166, F246-F254	11
1085	Oxygen Reduction/Evolution Reaction. <b>2019</b> , 143-186	
1084	Rational construction of self-supported triangle-like MOF-derived hollow (Ni,Co)Se arrays for electrocatalysis and supercapacitors. <b>2019</b> , 11, 6401-6409	79
1083	Life cycle CO <sub>2</sub> emissions from power generation using hydrogen energy carriers. <b>2019</b> , 44, 11219-11232	21
1082	Renewable energy storage via CO <sub>2</sub> and H <sub>2</sub> conversion to methane and methanol: Assessment for small scale applications. <b>2019</b> , 107, 497-506	32
1081	Clean hydrogen generation and storage strategies via CO <sub>2</sub> utilization into chemicals and fuels: A review. <b>2019</b> , 43, 5128-5150	45
1080	C2 and N3 substituted imidazolium functionalized poly(arylene ether ketone) anion exchange membrane for water electrolysis with improved chemical stability. <b>2019</b> , 581, 139-149	36
1079	Novel piperidinium functionalized anionic membrane for alkaline polymer electrolysis with excellent electrochemical properties. <b>2019</b> , 581, 283-292	31
1078	Energetic challenges and sonochemistry: A new alternative for hydrogen production?. <b>2019</b> , 18, 84-89	11
1077	Transition metal dichalcogenide-based composites for hydrogen production. <b>2019</b> , 1, 012001	8
1076	A Roadmap to Low-Cost Hydrogen with Hydroxide Exchange Membrane Electrolyzers. <b>2019</b> , 31, e1805876	85
1075	Hydrogen evolution reaction enhanced by water-soluble metallopyridinoporphyrazine complex adsorbed on highly oriented pyrolytic graphite. <b>2019</b> , 44, 11431-11440	4
1074	Energy systems engineering - a guided tour. <b>2019</b> , 1,	9

1073	Hydrogen production by PEM water electrolysis [A review. <b>2019</b> , 2, 442-454	314
1072	Electrode system for large-scale reverse electro dialysis: water electrolysis, bubble resistance, and inorganic scaling. <b>2019</b> , 49, 517-528	13
1071	A novel particle-in-nanoplate architecture of iron nickel phosphide intertwined with carbon nanotubes for efficient water oxidation and high-performance sodium-ion batteries. <b>2019</b> , 791, 1220-1230	15
1070	Electrodeposition of NiP alloy coatings: A review. <b>2019</b> , 369, 198-220	56
1069	Offshore gas production infrastructure reutilisation for blue energy production. <b>2019</b> , 108, 159-174	13
1068	Direct and indirect electrification of chemical industry using methanol production as a case study. <b>2019</b> , 243, 71-90	28
1067	Inert VO oxide promotes the electrocatalytic activity of Ni metal for alkaline hydrogen evolution. <b>2019</b> , 55, 3290-3293	23
1066	Analysis of the effect of surface wettability on hydrogen evolution reaction in water electrolysis using micro-patterned electrodes. <b>2019</b> , 101, 43-46	20
1065	Metal-Organic Frameworks for Hydrogen Energy Applications: Advances and Challenges. <b>2019</b> , 20, 1177-1215	32
1064	Hydrogen generation in a pressurized photobioreactor: Unexpected enhancement of biohydrogen production by the phototrophic bacterium Rhodospirillum rubrum. <b>2019</b> , 239, 635-643	11
1063	Synthesis and Electrocatalytic Properties of NiFe-Layered Double Hydroxide Nanomaterials. <b>2019</b> , 293-301	
1062	Laser structured nickel-iron electrodes for oxygen evolution in alkaline water electrolysis. <b>2019</b> , 44, 12671-12684	4
1061	Recent developments of strontium titanate for photocatalytic water splitting application. <b>2019</b> , 44, 14316-14340	4
1060	Comprehensive review on the techno-economics of sustainable large-scale clean hydrogen production. <b>2019</b> , 220, 593-609	168
1059	An Unconventional Iron Nickel Catalyst for the Oxygen Evolution Reaction. <b>2019</b> , 5, 558-568	136
1058	Towards Solar Methanol: Past, Present, and Future. <b>2019</b> , 6, 1801903	40
1057	Preparation and study of electrocatalytic activity of Ni-Pd(OH) <sub>2</sub> /C nanocomposite for hydrogen evolution reaction in alkaline solution. <b>2019</b> , 44, 8223-8232	4
1056	Recent advances in precious metal-free bifunctional catalysts for electrochemical conversion systems. <b>2019</b> , 7, 8006-8029	139

1055	Controlling the 3-D morphology of Ni-Fe-based nanocatalysts for the oxygen evolution reaction. <b>2019</b> , 11, 8170-8184	11
1054	The effect of Fe as constituent in Ni-base alloys on the oxygen evolution reaction in alkaline solutions at high current densities. <b>2019</b> , 44, 6392-6402	10
1053	Highly-dispersed Ru nanoparticles sputtered on graphene for hydrogen production. <b>2019</b> , 44, 7320-7325	14
1052	Carbon paste electrode modified with AgFeO <sub>2</sub> as an electrocatalyst with excellent activity for water reduction and oxidation. <b>2019</b> , 836, 158-164	5
1051	Potential of Hydrogen Production Through Alkaline Water Electrolysis Using Solar Radiation Around Semarang. <b>2019</b> , 125, 10006	2
1050	Performance Analysis of Single Cell Alkaline Electrolyser Using Mathematical Model. <b>2019</b> , 605, 012002	3
1049	BMIMBF <sub>4</sub> Mediated Electrochemical CO <sub>2</sub> Reduction to CO Is a Reverse Reaction of CO Oxidation in Air. Experimental Evidence. <b>2019</b> , 123, 30198-30212	3
1048	The Role of the Electric Field in Electrofreezing. <b>2019</b> , 123, 30443-30446	8
1047	Effectiveness of Ni-Fe alloy as cathode in alkaline water electrolysis process. <b>2019</b> ,	0
1046	In Situ Electrochemical Activation of a Codoped Heterogeneous System as a Highly Efficient Catalyst for the Oxygen Evolution Reaction in Alkaline Water Electrolysis. <b>2019</b> , 2, 8809-8817	8
1045	Nanocomposite electrodes for high current density over 3 A cm in solid oxide electrolysis cells. <b>2019</b> , 10, 5432	22
1044	Oscillating Hydrogen Bubbles at Pt Microelectrodes. <b>2019</b> , 123, 214503	12
1043	. <b>2019</b> ,	3
1042	Closed bipolar electrode for decoupled electrochemical water decontamination and hydrogen recovery. <b>2019</b> , 109, 106611	9
1041	Extending the Colloidal Transition Metal Dichalcogenide Library to ReS Nanosheets for Application in Gas Sensing and Electrocatalysis. <b>2019</b> , 15, e1904670	28
1040	Nickel-molybdenum nitride nanoplate electrocatalysts for concurrent electrolytic hydrogen and formate productions. <b>2019</b> , 10, 5335	149
1039	Graphite-Aligned Ni/Ni(OH) <sub>2</sub> Nanowire-Based Aqueous Asymmetric Supercapacitors Exhibiting Excellent Cycle Stability, High Rate Performance, and Wide Operation Voltage. <b>2019</b> , 4, 13543-13550	2
1038	A van der Waals Heterostructure Based on Graphene-like Gallium Nitride and Boron Selenide: A High-Efficiency Photocatalyst for Water Splitting. <b>2019</b> , 4, 21689-21697	49

1037	Cobalt tungsten oxide hydroxide hydrate (CTOHH) on DNA scaffold: an excellent bi-functional catalyst for oxygen evolution reaction (OER) and aromatic alcohol oxidation. <b>2019</b> , 48, 17117-17131	18
1036	Heterogeneous Model To Distinguish the Activity of Electrogenerated Chlorine Species from Soluble Chlorine in an Electrochemical Reactor. <b>2019</b> , 58, 22399-22407	8
1035	Hydrogen: Driving Renewable Energy. <b>2019</b> , 141-184	2
1034	Phenomenological behavior coupling hydrodynamics and electrode kinetics in a flow electrochemical reactor. Numerical analysis and experimental validation. <b>2019</b> , 355, 457-469	14
1033	Alternative cost-effective electrodes for hydrogen production in saline water condition. <b>2019</b> , 44, 5090-5098	10
1032	Ultrathin Fe-N-C Nanosheets Coordinated Fe-Doped CoNi Alloy Nanoparticles for Electrochemical Water Splitting. <b>2019</b> , 36, 1800252	17
1031	One-Pot Synthesis of Co-Doped VSe <sub>2</sub> Nanosheets for Enhanced Hydrogen Evolution Reaction. <b>2019</b> , 2, 644-653	41
1030	Non-neutral catalyst and reaction energy recovery to minimize the energy consumption for hydrogen production by recyclably indirect H <sub>2</sub> O electrolysis and CO <sub>2</sub> capture. <b>2019</b> , 180, 1203-1216	3
1029	Network-Like Ni <sub>1-x</sub> Mox Nanosheets: Multi-Functional Electrodes for Overall Water Splitting and Supercapacitor. <b>2019</b> , 6, 1338-1343	10
1028	Virus-templated PtNi(OH) <sub>2</sub> nanonetworks for enhanced electrocatalytic reduction of water. <b>2019</b> , 58, 167-174	32
1027	Electrochemical Performance of Borate-Doped Nickel Sulfide: Enhancement of the Bifunctional Activity for Total Water Splitting. <b>2019</b> , 6, 1443-1449	12
1026	Low-dimensional materials for alkaline oxygen evolution electrocatalysis. <b>2019</b> , 11, 119-132	13
1025	Hydrogen value chain and fuel cells within hybrid renewable energy systems: Advanced operation and control strategies. <b>2019</b> , 233-234, 321-337	34
1024	Effects of Fe doping on the photoelectrochemical properties of CuO photoelectrodes. <b>2019</b> , 163, 59-66	10
1023	Impacts of renewable hydrogen production from wind energy in electricity markets on potential hydrogen demand for light-duty vehicles. <b>2019</b> , 235, 1001-1016	34
1022	Anodization of Bismuth: Measuring Breakdown Voltage and Optimizing an Electrolytic Cell. <b>2019</b> , 96, 110-115	4
1021	Earth-Abundant Oxygen Electrocatalysts for Alkaline Anion-Exchange-Membrane Water Electrolysis: Effects of Catalyst Conductivity and Comparison with Performance in Three-Electrode Cells. <b>2019</b> , 9, 7-15	89
1020	Plasma Hydrogenated TiO <sub>2</sub> /Nickel Foam as an Efficient Bifunctional Electrocatalyst for Overall Water Splitting. <b>2019</b> , 7, 885-894	27

1019	Experimental and numerical investigation of gas-liquid flow in water electrolysis under magnetic field. <b>2019</b> , 832, 293-302	8
1018	Electrochemical fabrication of Fe-based binary and ternary phosphide cathodes for proton exchange membrane water electrolyzer. <b>2019</b> , 807, 148813	16
1017	Ultra-low loading of IrO <sub>2</sub> with an inverse-opal structure in a polymer-exchange membrane water electrolysis. <b>2019</b> , 58, 158-166	38
1016	Nanosheets of Nickel Iron Hydroxy Carbonate Hydrate with Pronounced OER Activity under Alkaline and Near-Neutral Conditions. <b>2019</b> , 58, 1895-1904	40
1015	Engineering an Earth-Abundant Element-Based Bifunctional Electrocatalyst for Highly Efficient and Durable Overall Water Splitting. <b>2019</b> , 29, 1807031	89
1014	Wind-hydrogen standalone uninterrupted power supply plant for all-climate application. <b>2019</b> , 44, 3433-3449	25
1013	Hydrogen generation with acid/alkaline amphoteric water electrolysis. <b>2019</b> , 38, 162-169	42
1012	Synthesis and activities of IrO <sub>2</sub> /Ti <sub>1-x</sub> W <sub>x</sub> O <sub>2</sub> electrocatalyst for oxygen evolution in solid polymer electrolyte water electrolyzer. <b>2019</b> , 833, 471-479	5
1011	Anionic multiblock copolymer membrane based on vinyl addition polymerization of norbornenes: Applications in anion-exchange membrane fuel cells. <b>2019</b> , 570-571, 394-402	71
1010	High-performance anion-exchange membrane water electrolysis. <b>2019</b> , 295, 99-106	88
1009	Characterisation and processing of aqueous LaNi <sub>0.6</sub> Fe <sub>0.4</sub> O <sub>3</sub> Suspensions into Porous Electrode Layers for Alkaline Water Electrolysis. <b>2019</b> , 39, 1271-1278	0
1008	State-of-the art CAPEX data for water electrolyzers, and their impact on renewable hydrogen price settings. <b>2019</b> , 44, 4406-4413	93
1007	Effects of magnetic field on water electrolysis using foam electrodes. <b>2019</b> , 44, 1352-1358	22
1006	The role of hydrogen and fuel cells in the global energy system. <b>2019</b> , 12, 463-491	1196
1005	Enhanced Water Desalination by Increasing the Electroconductivity of Carbon Powders for High-Performance Flow-Electrode Capacitive Deionization. <b>2019</b> , 7, 1085-1094	48
1004	Novel Method and Molten Salt Electrolytic Cell for Implementing a Hydrogen Fuel, Sustainable, Closed Clean Energy Cycle on a Large Scale. <b>2019</b> , 277-312	
1003	In-Situ Grown, Passivator-Modulated Anodization Derived Synergistically Well-Mixed NiBe Oxides from Ni Foam as High-Performance Oxygen Evolution Reaction Electrocatalyst. <b>2019</b> , 2, 743-753	22
1002	Gas-Diffusion Electrodes for Carbon Dioxide Reduction: A New Paradigm. <b>2019</b> , 4, 317-324	238

1001	Optimization of hydrogen production over TiO <sub>2</sub> supported copper and nickel oxides: effect of photoelectrochemical features. <b>2019</b> , 49, 27-38	2
1000	Ruthenium coordinated with triphenylphosphine-hyper-crosslinked polymer: An efficient catalyst for hydrogen evolution reaction and hydrolysis of ammonia borane. <b>2019</b> , 466, 193-201	34
999	Recent progress on earth abundant electrocatalysts for hydrogen evolution reaction (HER) in alkaline medium to achieve efficient water splitting [A review]. <b>2019</b> , 34, 111-160	198
998	Modified exergy and exergoeconomic analyses of a biomass post fired hydrogen production combined cycle. <b>2019</b> , 135, 1466-1480	9
997	Cobalt-based composite films on electrochemically activated carbon cloth as high performance overall water splitting electrodes. <b>2019</b> , 44, 23-33	22
996	A highly efficient hydrogen generation electrolysis system using alkaline zinc hydroxide solution. <b>2019</b> , 44, 72-81	6
995	Design and optimization of hybrid solar-hydrogen generation system using TRNSYS. <b>2020</b> , 45, 15814-15830	28
994	Recent Development of Ni/Fe-Based Micro/Nanostructures toward Photo/Electrochemical Water Oxidation. <b>2020</b> , 10, 1900954	200
993	Multiscale design for high-performance glycolic acid electro-synthesis cell: Preparation of nanoscale-IrO <sub>2</sub> -applied Ti anode and optimization of cell assembling. <b>2020</b> , 351, 12-20	9
992	Development of RuO <sub>2</sub> /CeO <sub>2</sub> heterostructure as an efficient OER electrocatalyst for alkaline water splitting. <b>2020</b> , 45, 18635-18644	41
991	Boron-Doped Carbon nanoparticles supported palladium as an efficient hydrogen evolution electrode in PEM water electrolysis. <b>2020</b> , 146, 2281-2290	13
990	Electrodeposits of nickel with reduced graphene oxide (Ni/rGO) and their enhanced electroactivity towards hydrogen evolution in water electrolysis. <b>2020</b> , 241, 122316	8
989	2D Electrocatalysts for Converting Earth-Abundant Simple Molecules into Value-Added Commodity Chemicals: Recent Progress and Perspectives. <b>2020</b> , 32, e1904870	49
988	Hierarchical microsphere assembled by nanoplates embedded with MoS and (NiFe)S nanoparticles as low-cost electrocatalyst for hydrogen evolution reaction. <b>2020</b> , 31, 035403	5
987	O-assisted and pristine Au-Pt(100) surfaces: A platform for adsorption and decomposition of H <sub>2</sub> O. <b>2020</b> , 45, 18666-18675	4
986	Highly efficient Ni nanotube arrays and Ni nanotube arrays coupled with NiFe layered-double-hydroxide electrocatalysts for overall water splitting. <b>2020</b> , 448, 227434	25
985	In-situ formation of indium seed layer for copper metallization of silicon heterojunction solar cells. <b>2020</b> , 204, 110243	5
984	Phosphoric acid doped composite proton exchange membrane for hydrogen production in medium-temperature copper chloride electrolysis. <b>2020</b> , 45, 22209-22222	6

983	Self-supported iron-doping NiSe <sub>2</sub> nanowrinkles as bifunctional electrocatalysts for electrochemical water splitting. <b>2020</b> , 818, 152833	14
982	Microbial electrolysis cell (MEC): Strengths, weaknesses and research needs from electrochemical engineering standpoint. <b>2020</b> , 257, 113938	79
981	Co <sub>3</sub> S <sub>4</sub> nanosheets on Ni foam via electrodeposition with sulfurization as highly active electrocatalysts for anion exchange membrane electrolyzer. <b>2020</b> , 45, 36-45	29
980	A critical review on the definitions used to calculate the energy efficiency coefficients of water electrolysis cells working under near ambient temperature conditions. <b>2020</b> , 447, 227350	37
979	Kinetic Study of the Reduction Step for Chemical Looping Steam Methane Reforming by CeO <sub>2</sub> -Fe <sub>2</sub> O <sub>3</sub> Oxygen Carriers. <b>2020</b> , 43, 540-552	7
978	Insights into membrane-separated organic electrosynthesis: the case of adiponitrile electrochemical production. <b>2020</b> , 5, 136-144	12
977	Hydrogen production for energy: An overview. <b>2020</b> , 45, 3847-3869	469
976	Single Nanometer-Sized NiFe-Layered Double Hydroxides as Anode Catalyst in Anion Exchange Membrane Water Electrolysis Cell with Energy Conversion Efficiency of 74.7% at 1.0 A cm <sup>2</sup> . <b>2020</b> , 10, 1886-1893	39
975	Electrical decoupling of microbial electrochemical reactions enables spontaneous H <sub>2</sub> evolution. <b>2020</b> , 13, 495-502	13
974	3D-Printed electrodes for membraneless water electrolysis. <b>2020</b> , 4, 213-225	23
973	Preparation of Ni <sub>80</sub> Pt <sub>20</sub> alloy as a novel electrocatalysts for hydrogen evolution reaction. <b>2020</b> , 45, 3940-3947	7
972	3D porous and self-supporting Ni foam@graphene@Ni <sub>3</sub> S <sub>2</sub> as a bifunctional electrocatalyst for overall water splitting in alkaline solution. <b>2020</b> , 858, 113795	9
971	Performance comparison of mono-polar and bi-polar configurations of alkaline electrolysis stack through 3-D modelling and experimental fabrication. <b>2020</b> , 149, 760-772	1
970	In-situ determination of current density distribution and fluid modeling of an electrocoagulation process and its effects on natural organic matter removal for drinking water treatment. <b>2020</b> , 171, 115404	13
969	A review on NiFe-based electrocatalysts for efficient alkaline oxygen evolution reaction. <b>2020</b> , 448, 227375	116
968	Investigation of anion doping effect to boost overall water splitting. <b>2020</b> , 381, 84-95	11
967	Binary electrocatalyst composed of Mo <sub>2</sub> C nanocrystals with ultra-low Pt loadings anchored in TiO <sub>2</sub> nanotube arrays for hydrogen evolution reaction. <b>2020</b> , 509, 144679	14
966	Flame dynamics analysis of highly hydrogen-enrichment premixed turbulent combustion. <b>2020</b> , 45, 1072-1083	9

965	Developments and Perspectives in 3d Transition-Metal-Based Electrocatalysts for Neutral and Near-Neutral Water Electrolysis. <b>2020</b> , 10, 1902666	113
964	Advances and challenges in electrochemical CO <sub>2</sub> reduction processes: an engineering and design perspective looking beyond new catalyst materials. <b>2020</b> , 8, 1511-1544	141
963	Hierarchical Chestnut-Burr Like Structure of Copper Cobalt Oxide Electrocatalyst Directly Grown on Ni Foam for Anion Exchange Membrane Water Electrolysis. <b>2020</b> , 8, 2344-2349	18
962	Bifunctional CdS@Co <sub>9</sub> S <sub>8</sub> /Ni <sub>3</sub> S <sub>2</sub> catalyst for efficient electrocatalytic and photo-assisted electrocatalytic overall water splitting. <b>2020</b> , 8, 3083-3096	43
961	Ni foam-supported azo linkage cobalt phthalocyanine as an efficient electrocatalyst for oxygen evolution reaction. <b>2020</b> , 449, 227516	22
960	Effects of steam on toluene hydrogenation over a Ni catalyst. <b>2020</b> , 590, 117374	6
959	Separators for alkaline water electrolysis prepared by plasma-initiated grafting of acrylic acid on microporous polypropylene membranes. <b>2020</b> , 45, 80-93	7
958	The synthesis of a Zirfon-type porous separator with reduced gas crossover for alkaline electrolyzer. <b>2020</b> , 44, 1875-1885	19
957	Amorphous MoS <sub>2</sub> coated Ni <sub>3</sub> S <sub>2</sub> nanosheets as bifunctional electrocatalysts for high-efficiency overall water splitting. <b>2020</b> , 332, 135454	23
956	V Incorporated ECo(OH): A Robust and Efficient Electrocatalyst for Water Oxidation. <b>2020</b> , 59, 730-740	14
955	Amorphous Catalysts and Electrochemical Water Splitting: An Untold Story of Harmony. <b>2020</b> , 16, e1905779	210
954	Mesoporous iridium oxide/Sb-doped SnO <sub>2</sub> nanostructured electrodes for polymer electrolyte membrane water electrolysis. <b>2020</b> , 45, 1409-1416	9
953	Interlaced rosette-like MoS <sub>2</sub> /Ni <sub>3</sub> S <sub>2</sub> /NiFe-LDH grown on nickel foam: A bifunctional electrocatalyst for hydrogen production by urea-assisted electrolysis. <b>2020</b> , 45, 23-35	33
952	An overview of development and challenges in hydrogen powered vehicles. <b>2020</b> , 17, 13-37	48
951	Introduction. <b>2020</b> , 1-6	2
950	Room-temperature sputtered electrocatalyst WSe <sub>2</sub> nanomaterials for hydrogen evolution reaction. <b>2020</b> , 47, 107-111	22
949	Hydrogen from solar energy, a clean energy carrier from a sustainable source of energy. <b>2020</b> , 44, 4110-4131	96
948	Multifunctional Co <sub>3</sub> D@Co <sub>3</sub> B catalysts for efficient hydrogen generation. <b>2020</b> , 45, 380-390	14

947	Phase-Field Modeling and Simulation of Gas Bubble Coalescence and Detachment in a Gas-Liquid Two-Phase Electrochemical System. <b>2020</b> , 167, 013532	5
946	Aspen Plus model of an alkaline electrolysis system for hydrogen production. <b>2020</b> , 45, 3916-3929	33
945	Nickel is a Different Pickle: Trends in Water Oxidation Catalysis for Molecular Nickel Complexes. <b>2020</b> , 13, 6629-6634	3
944	Microkinetic assessment of electrocatalytic oxygen evolution reaction over iridium oxide in unbuffered conditions. <b>2020</b> , 391, 435-445	18
943	Performance Correlation of Self-Supported Electrodes in Half-Cell and Single-Cell Tests for Water Electrolysis. <b>2020</b> , 8, 15815-15821	3
942	Quantifying bubble size and 3D velocity in a vortex with digital holographic particle tracking velocimetry (DHPTV). <b>2020</b> , 76, 101826	1
941	Water oxidation electrocatalysis using ruthenium coordination oligomers adsorbed on multiwalled carbon nanotubes. <b>2020</b> , 12, 1060-1066	27
940	Rational molecular design of anion exchange membranes functionalized with alicyclic quaternary ammonium cations. <b>2020</b> , 11, 6953-6963	19
939	Bifunctional Behavior of Pd/Ni Nanocatalysts on MOF-Derived Carbons for Alkaline Water-splitting. <b>2020</b> , 32, 3060-3074	8
938	Renewable hydrogen for the chemical industry. <b>2020</b> , 7, 1	8
937	Ionomers for electrochemical energy conversion & storage technologies. <b>2020</b> , 211, 123080	27
936	Electrocatalytic hydrogenation and depolymerization pathways for lignin valorization: toward mild synthesis of chemicals and fuels from biomass. <b>2020</b> , 22, 7233-7264	22
935	Periodic Porous 3D Electrodes Mitigate Gas Bubble Traffic during Alkaline Water Electrolysis at High Current Densities. <b>2020</b> , 10, 2002955	39
934	Boosting the oxygen evolution activity of copper foam containing trace Ni by intentionally supplementing Fe and forming nanowires in anodization. <b>2020</b> , 364, 137170	9
933	Thermo-economic analysis of reverse water-gas shift process with different temperatures for green methanol production as a hydrogen carrier. <b>2020</b> , 41, 101280	7
932	Electrochemical properties of vertically aligned graphenes: tailoring heterogeneous electron transfer through manipulation of the carbon microstructure. <b>2020</b> , 2, 5319-5328	6
931	Octahedral Coordinated Trivalent Cobalt Enriched Multimetal Oxygen-Evolution Catalysts. <b>2020</b> , 10, 2002593	21
930	Sol-gel Synthesis of Ce <sub>0.8</sub> Sr <sub>0.2</sub> Co <sub>1-(x+y)</sub> Ni <sub>x</sub> FeyO <sub>3</sub> -[(x = 0.1, 0.2, and y = 0.2, 0.5, 0.7)] Nanocomposite-Type Electrocatalyst for the Oxygen Evolution Reaction in Alkaline Media. <b>2020</b> , 11, 628-641	

929	Ultralow loading electroless deposition of IrOx on nickel foam for efficient and stable water oxidation catalysis. <b>2020</b> , 45, 26583-26594	6
928	Clean production and utilisation of hydrogen in molten salts.. <b>2020</b> , 10, 36020-36030	9
927	Recent advances in portable heavy metal electrochemical sensing platforms. <b>2020</b> , 6, 2676-2690	44
926	Ni foam electrode solution impregnated with Ni-Fe (OH) catalysts for efficient oxygen evolution reaction in alkaline electrolyzers.. <b>2020</b> , 10, 25426-25434	2
925	Modeling 3D current and potential distribution in a microbial electrolysis cell with augmented anode surface and non-ideal flow pattern. <b>2020</b> , 162, 107714	8
924	CFD modeling of multiphase flow in an alkaline water electrolyzer. <b>2020</b> , 227, 115926	7
923	Ag-decorated TiO2 nanofibers as Arrhenius equation-incompatible and effective photocatalyst for water splitting under visible light irradiation. <b>2020</b> , 604, 125307	7
922	Vulcanization and acid etching of NiCoFe layered ternary hydroxides for enhancing oxygen evolution reaction. <b>2020</b> , 832, 155012	9
921	Self-supported vanadium-incorporated cobalt phosphide as a highly efficient bifunctional electrocatalyst for water splitting. <b>2020</b> , 846, 156350	12
920	Improving plasma sprayed Raney-type nickel-molybdenum electrodes towards high-performance hydrogen evolution in alkaline medium. <b>2020</b> , 10, 10948	9
919	Ferrites for electrocatalytic water splitting applications. <b>2020</b> , 123-145	
918	Comparative Analysis of Energy and Exergy Performance of Hydrogen Production Methods. <b>2020</b> , 22,	4
917	Microwave-Induced Structural Engineering and Pt Trapping in 6R-TaS for the Hydrogen Evolution Reaction. <b>2020</b> , 16, e2003372	8
916	Nonprecious Bimetallic IronMolybdenum Sulfide Electrocatalysts for the Hydrogen Evolution Reaction in Proton Exchange Membrane Electrolyzers. <b>2020</b> , 10, 14336-14348	17
915	Renewable Hydrogen Production Processes for the Off-Gas Valorization in Integrated Steelworks through Hydrogen Intensified Methane and Methanol Syntheses. <b>2020</b> , 10, 1535	11
914	Transport-Based Modeling of Bubble Nucleation on Gas Evolving Electrodes. <b>2020</b> , 36, 15112-15118	4
913	Benchmarking Perovskite Electrocatalysts DER Activity as Candidate Materials for Industrial Alkaline Water Electrolysis. <b>2020</b> , 10, 1387	7
912	Atomically Precise Metal Nanoclusters. <b>2020</b> , 1, 1-139	

911	Photocatalytic nanomaterials for hydrogen evolution from water splitting. <b>2020</b> , 139-158	0
910	One-step electrodeposition of cauliflower-like NiFeSn particles as a highly-efficient electrocatalyst for the hydrogen evolution reaction. <b>2020</b> , 45, 24615-24625	5
909	Electrodeposition-fabricated catalysts for polymer electrolyte water electrolysis. <b>2020</b> , 37, 1275-1294	2
908	Hydrogen from sun. <b>2020</b> , 75-89	
907	Facile electrochemical synthesis of Ni(OH) <sub>2</sub> /MoS catalyst on oxidized carbon fiber for efficient alkaline hydrogen evolution reaction. <b>2020</b> , 155, 108090	1
906	Nitrogen doped carbon quantum dots conjugated with AgNi alloy nanoparticles as potential electrocatalyst for efficient water splitting. <b>2020</b> , 847, 156492	8
905	Strategic Atomic Layer Deposition and Electrospinning of Cobalt Sulfide/Nitride Composite as Efficient Bifunctional Electrocatalysts for Overall Water Splitting. <b>2020</b> , 16, e2002432	23
904	Ultrathin exfoliated WS <sub>2</sub> nanosheets in low-boiling-point solvents for high-efficiency hydrogen evolution reaction. <b>2020</b> , 770, 012079	2
903	Electrochemical Hydrogen Production Using Separated-Gas Cells for Soybean Oil Hydrogenation. <b>2020</b> , 8, 832	1
902	Three-dimensional self-supported iron-doped nickel sulfides for sustainable overall water splitting. <b>2020</b> , 181, 109661	3
901	A novel nickel electrode with gradient porosity distribution for alkaline water splitting. <b>2020</b> , 45, 24248-24252	0
900	Electrochemical deamination of alkoxyamine lactams. <b>2020</b> , 61, 152279	1
899	Efficient Renewable-to-Hydrogen Conversion via Decoupled Electrochemical Water Splitting. <b>2020</b> , 1, 100138	16
898	Electrocatalytic hydrogen evolution under neutral pH conditions: current understandings, recent advances, and future prospects. <b>2020</b> , 13, 3185-3206	85
897	Life cycle assessment of H <sub>2</sub> O electrolysis technologies. <b>2020</b> , 45, 23765-23781	13
896	Fluorophosphates: Next Generation Cathode Materials for Rechargeable Batteries. <b>2020</b> , 10, 2001449	19
895	Metal fluorophosphate polyanionic insertion hosts as efficient bifunctional electrocatalysts for oxygen evolution and reduction reactions. <b>2020</b> , 8, 18651-18658	3
894	Investigation of the stability of NiFe-(oxy)hydroxide anodes in alkaline water electrolysis under industrially relevant conditions. <b>2020</b> , 10, 5593-5601	11

893	Towards highly efficient electrochemical CO <sub>2</sub> reduction: Cell designs, membranes and electrocatalysts. <b>2020</b> , 277, 115557	46
892	Arrayed Cobalt Phosphide Electrocatalyst Achieves Low Energy Consumption and Persistent H Liberation from Anodic Chemical Conversion. <b>2020</b> , 12, 154	8
891	Twisted ether-free polymer based alkaline membrane for high-performance water electrolysis. <b>2020</b> , 480, 228805	14
890	Non-precious-metal catalysts for alkaline water electrolysis: operando characterizations, theoretical calculations, and recent advances. <b>2020</b> , 49, 9154-9196	147
889	Performance of nickel electrode for alkaline water electrolysis prepared by high pressure cold spray. <b>2020</b> , 45, 33007-33015	2
888	Energy and economic assessment of distributed renewable gas and electricity generation in a small disadvantaged urban community. <b>2020</b> , 280, 115974	2
887	Anodically treated Ni/reduced graphene oxide electrodeposits as effective low-cost electrocatalysts for hydrogen evolution in alkaline water electrolysis. <b>2020</b> , 110, 108145	3
886	Heterologous Hydrogenase Overproduction Systems for Biotechnology-An Overview. <b>2020</b> , 21,	7
885	Reconstruction-Determined Alkaline Water Electrolysis at Industrial Temperatures. <b>2020</b> , 32, e2001136	67
884	High-Efficiency Anion Exchange Membrane Water Electrolysis Employing Non-Noble Metal Catalysts. <b>2020</b> , 10, 2002285	48
883	Environmental impact of hydrogen production from Southwest China's hydro power water abandonment control. <b>2020</b> , 45, 25587-25598	9
882	Recent advances in phase, size, and morphology-oriented nanostructured nickel phosphide for overall water splitting. <b>2020</b> , 8, 19196-19245	79
881	Nickel oxide on directly grown carbon nanofibers for energy storage applications. <b>2020</b> , 50, 1217-1229	6
880	Framework for evaluating the performance limits of membraneless electrolyzers. <b>2020</b> , 13, 3663-3678	11
879	Metal oxide-based materials as an emerging family of hydrogen evolution electrocatalysts. <b>2020</b> , 13, 3361-3392	151
878	Regulation of Morphology and Electronic Structure of NiSe by Fe for High Effective Oxygen Evolution Reaction. <b>2020</b> , 15, 3845-3852	6
877	Acid mine drainage wastewater photoelectrolysis for hydrogen fuel generation: Preliminary results. <b>2020</b> , 44, 12188-12196	1
876	CFD Modeling and Experimental Validation of an Alkaline Water Electrolysis Cell for Hydrogen Production. <b>2020</b> , 8, 1634	12

875	Sustainable district energy integrating biomass peaking with geothermal baseload heating: A case study of decarbonizing Cornell's energy system. <b>2020</b> , 12, 066302	4
874	Conceptualization of the optimal design of a hydroxyl booster dry cell for enhancing efficiency of internal combustion engines. <b>2020</b> , 91, 819-823	0
873	Ni alloy nanowires as high efficiency electrode materials for alkaline electrolyzers. <b>2020</b> , 46, 35777-35777	3
872	Detection of lysine molecular ions in solution gated field effect transistors based on unmodified graphene. <b>2020</b> , 128, 215302	1
871	Chemical Leaching of Inactive Cr and Subsequent Electrochemical Resurfacing of Catalytically Active Sites in Stainless Steel for High-Rate Alkaline Hydrogen Evolution Reaction. <b>2020</b> , 3, 12596-12606	10
870	Thermal Efficiency of Oxyhydrogen Gas Burner. <b>2020</b> , 13, 5526	2
869	Graphite Electrodes for Hydrogen Production by Acid Electrolysis. <b>2020</b> , 1012, 158-163	
868	Numerical Deconvolution of Surface Interrogation Scanning Electrochemical Microscopy Experiments on Platinum During Hydrogen Evolution. <b>2020</b> , 7, 4863-4872	1
867	Membrane reactor technology and catalysis for intensified hydrogen production. <b>2020</b> , 121-140	
866	Complete Reconstruction of Hydrate Pre-Catalysts for Ultrastable Water Electrolysis in Industrial-Concentration Alkali Media. <b>2020</b> , 1, 100241	42
865	FeNi <sub>3</sub> @Ni <sub>3</sub> N as high-performance catalyst for overall water splitting. <b>2020</b> , 4, 6245-6250	1
864	Thermodynamic performance assessment of boron based thermochemical water splitting cycle for renewable hydrogen production. <b>2020</b> , 45, 34579-34586	3
863	Solution combustion synthesis of porous Co <sub>3</sub> O <sub>4</sub> nanoparticles as oxygen evolution reaction (OER) electrocatalysts in alkaline medium. <b>2020</b> , 836, 154919	15
862	Manipulating the Corrosion Resistance of SnO <sub>2</sub> Aerogels through Doping for Efficient and Durable Oxygen Evolution Reaction Electrocatalysis in Acidic Media. <b>2020</b> , 10, 7283-7294	22
861	Recent Progress in Low Pt Content Electrocatalysts for Hydrogen Evolution Reaction. <b>2020</b> , 7, 2000396	32
860	Advancement of Platinum (Pt)-Free (Non-Pt Precious Metals) and/or Metal-Free (Non-Precious-Metals) Electrocatalysts in Energy Applications: A Review and Perspectives. <b>2020</b> , 34, 6634-6695	53
859	Alkaline water-splitting reactions over Pd/Co-MOF-derived carbon obtained microwave-assisted synthesis.. <b>2020</b> , 10, 17359-17368	13
858	Electrolytic Bubble Nucleation Activation in Pool Boiling of Water: Heat Transfer Enhancement and Reduction of Incipient Boiling Superheat. <b>2020</b> , 157, 119755	3

857	Effects of electrolyzed hydrogen water ingestion during endurance exercise in a heated environment on body fluid balance and exercise performance. <b>2020</b> , 7, 290-299	4
856	Study of the Oxygen Evolution Reaction at Strontium Palladium Perovskite Electrocatalyst in Acidic Medium. <b>2020</b> , 21,	6
855	Canonic-Like HER Activity of Cr Mo B Solid Solution: Overpowering Pt/C at High Current Density. <b>2020</b> , 32, e2000855	32
854	Tailorable Electrocatalytic 5-Hydroxymethylfurfural Oxidation and H <sub>2</sub> Production: Architecture-Performance Relationship in Bifunctional Multilayer Electrodes. <b>2020</b> , 14, 6812-6822	30
853	Synergy of Cobalt Iron Tetrathiomolybdate Coated on Cobalt Iron Carbonate Hydroxide Hydrate Nanowire Arrays for Overall Water Splitting. <b>2020</b> , 7, 2309-2313	4
852	Ranking locations for producing hydrogen using geothermal energy in Afghanistan. <b>2020</b> , 45, 15924-15940	36
851	Critical assessment of the production scale required for fossil parity of green electrolytic hydrogen. <b>2020</b> , 45, 17067-17075	24
850	Development of an Autothermal Formate-Based Hydrogen Generator: From Optimization of Formate Dehydrogenation Conditions to Thermal Integration with Fuel Cells. <b>2020</b> , 8, 9846-9856	14
849	Thermal characterization of an alkaline electrolysis cell for hydrogen production at atmospheric pressure. <b>2020</b> , 276, 117910	8
848	NiFe-coordinated zeolitic imidazolate framework derived trifunctional electrocatalyst for overall water-splitting and zinc-air batteries. <b>2020</b> , 579, 1-11	20
847	Water Electrolysis Using Thin Pt and RuO <sub>4</sub> Catalysts Deposited by a Flame-Annealing Method on Pencil-Lead Graphite-Rod Electrodes. <b>2020</b> , 5, 6090-6099	4
846	Enhanced alkaline hydrogen evolution performance of ruthenium by synergetic doping of cobalt and phosphorus. <b>2020</b> , 4, 4637-4643	2
845	Electrocatalytic performance and cell voltage characteristics of 1st-row transition metal phosphate (TM-Pi) catalysts at neutral pH. <b>2020</b> , 17, 100426	9
844	Strengthening external magnetic fields with activated carbon graphene for increasing hydrogen production in water electrolysis. <b>2020</b> , 45, 19370-19380	13
843	Opportunities and challenges of low-carbon hydrogen via metallic membranes. <i>Progress in Energy and Combustion Science</i> , <b>2020</b> , 80, 100851	33.6 20
842	The thermocapillary effect on gas bubbles growing on electrodes of different sizes. <b>2020</b> , 353, 136461	9
841	CoP <sub>2</sub> Nanoparticles Deposited on Nanometer-Thick Pt-Coated Fluorine-Doped Tin Oxide Substrates as Electrocatalysts for Simultaneous Hydrogen Evolution and Oxygen Evolution. <b>2020</b> , 3, 6507-6515	6
840	Boosting Activity on Co <sub>4</sub> N Porous Nanosheet by Coupling CeO <sub>2</sub> for Efficient Electrochemical Overall Water Splitting at High Current Densities. <b>2020</b> , 30, 1910596	110

839	The Influence of the Electrodeposition Parameters on the Properties of Mn-Co-Based Nanofilms as Anode Materials for Alkaline Electrolysers. <b>2020</b> , 13,	2
838	First-Principles Investigation of $\gamma$ -FeOOH for Hydrogen Evolution: Identifying Reactive Sites and Boosting Surface Reactions. <b>2020</b> , 26, 7118-7123	3
837	2D Thin Sheet Heterostructures of MoS on MoSe as Efficient Electrocatalyst for Hydrogen Evolution Reaction in Wide pH Range. <b>2020</b> , 59, 4377-4388	21
836	Hydrogen: An Energy Carrier. <b>2020</b> , 475-493	5
835	Two-dimensional metal oxide nanomaterials for sustainable energy applications. <b>2020</b> , 39-72	3
834	Study of the Hydrogen Evolution Reaction Using Ionic Liquid/Cobalt Porphyrin Systems as Electro and Photoelectrocatalysts. <b>2020</b> , 10, 239	3
833	Highly quaternized polystyrene ionomers for high performance anion exchange membrane water electrolysers. <b>2020</b> , 5, 378-385	147
832	A Global Overview of Future Energy. <b>2020</b> , 727-756	3
831	Insight into electrochemical performance of porous $\text{Fe}_{x}\text{Si}_{y}$ intermetallic anode for zinc electrowinning. <b>2020</b> , 191, 108645	5
830	Nanostructured $\gamma$ -MnO <sub>2</sub> /Cd(OH) <sub>2</sub> Heterojunction Constructed under Ambient Conditions as a Sustainable Cathode for Photocatalytic Hydrogen Production. <b>2020</b> , 59, 7584-7593	3
829	Comparative review of hydrogen production technologies for nuclear hybrid energy systems. <b>2020</b> , 123, 103317	62
828	Highly Robust Non-Noble Alkaline Hydrogen-Evolving Electrocatalyst from Se-Doped Molybdenum Disulfide Particles on Interwoven CoSe Nanowire Arrays. <b>2020</b> , 16, e1906629	41
827	Measurement of powdery oxygen evolution reaction catalyst under practical current density using pressure-bonded electrodes. <b>2020</b> , 353, 136544	2
826	Two-Dimensional Layered Materials: High-Efficient Electrocatalysts for Hydrogen Evolution Reaction. <b>2020</b> , 3, 6270-6296	27
825	Does power ultrasound (26 kHz) affect the hydrogen evolution reaction (HER) on Pt polycrystalline electrode in a mild acidic electrolyte?. <b>2020</b> , 69, 105238	8
824	Role of perovskites as a bi-functional catalyst for electrochemical water splitting: A review. <b>2020</b> , 44, 9714-9747	18
823	Electro-catalytic hydrogen evolution and magnetic behavior of N-doped-rGO supported Ni <sub>x</sub> Py. <b>2020</b> , 2, 1	1
822	Novel hybrid system of pulsed HHO generator/TEG waste heat recovery for CO reduction of a gasoline engine. <b>2020</b> , 45, 23576-23586	8

821	Electrochemical Production of Hydrogen in Fermented Flour by Stainless Steel Electrode. <b>2020</b> , 32, 835-838	
820	Theoretical and experimental evaluation of the potential-current distribution and the recirculation flow rate effect in the performance of a porous electrode microbial electrolysis cell (MEC). <b>2020</b> , 279, 118463	6
819	FeNi <sub>3</sub> and Ni-Based Nanoparticles as Electrocatalysts for Magnetically Enhanced Alkaline Water Electrolysis. <b>2020</b> , 11, 567-577	5
818	Bifunctionality behavior of phase controlled nickel selenides in alkaline water electrolysis application. <b>2020</b> , 354, 136742	9
817	Integrating anaerobic digestion, hydrothermal liquefaction, and biomethanation within a power-to-gas framework for dairy waste management and grid decarbonization: a techno-economic assessment. <b>2020</b> , 4, 4644-4661	15
816	Gaseous Biofuels to Sustainable Mobility. <b>2020</b> ,	
815	0.03 V Electrolysis Voltage Driven Hydrazine Assisted Hydrogen Generation on NiCo phosphide Nanowires Supported NiCoHydroxide Nanosheets. <b>2020</b> , 7, 3089-3097	4
814	Efficient Oxygen Evolution and Gas Bubble Release Achieved by a Low Gas Bubble Adhesive Iron-Nickel Vanadate Electrocatalyst. <b>2020</b> , 16, e2002412	33
813	Single transition metal atoms anchored on a CN monolayer as efficient catalysts for hydrazine electrooxidation. <b>2020</b> , 22, 16691-16700	3
812	Phosphorus Vacancies that Boost Electrocatalytic Hydrogen Evolution by Two Orders of Magnitude. <b>2020</b> , 132, 8258-8263	13
811	Influence of Bubbles on the Energy Conversion Efficiency of Electrochemical Reactors. <b>2020</b> , 4, 555-579	130
810	Alkaline Water Electrolysis Powered by Renewable Energy: A Review. <b>2020</b> , 8, 248	99
809	Modeling and statistical analysis of the three-side membrane reactor for the optimization of hydrocarbon production from CO <sub>2</sub> hydrogenation. <b>2020</b> , 207, 112481	11
808	Bioelectrosynthesis of Organic and Inorganic Chemicals in Bioelectrochemical System. <b>2020</b> , 24, 03120001	6
807	Simultaneous Hydrogen Evolution and Lignin Depolymerization using NiSn Electrocatalysts in a Biomass-Depolarized Electrolyzer. <b>2020</b> , 167, 043502	3
806	Methanol production from water electrolysis and tri-reforming: Process design and technical-economic analysis. <b>2020</b> , 38, 241-251	20
805	Visualization of aquaionic splitting via iron corrosion. <b>2020</b> , 10, 1726	2
804	Green touch for hydrogen production via alkaline electrolysis: The semi-flexible PV panels mounted wind turbine design, production and performance analysis. <b>2020</b> , 45, 10680-10695	11

803	Crystal phase tuning and valence engineering in non-noble catalysts for outstanding overall water splitting. <b>2020</b> , 8, 4524-4532	5
802	Hydrogen production by photovoltaic-electrolysis using aqueous waste from ornamental stones industries. <b>2020</b> , 152, 1266-1273	9
801	In Situ Deactivation of Catechol-Containing Adhesive Using Electrochemistry. <b>2020</b> , 142, 4631-4638	29
800	Activating the hydrogen evolution and overall water splitting performance of NiFe LDH by cation doping and plasma reduction. <b>2020</b> , 266, 118627	110
799	Enhancement of bio-hydrogen generation by spirulina via an electrochemical photo-bioreactor (EPBR). <b>2020</b> , 45, 6231-6242	18
798	Hydrogen Production via Steam Reforming: A Critical Analysis of MR and RMM Technologies. <b>2020</b> , 10,	26
797	Superior performance and stability of anion exchange membrane water electrolysis: pH-controlled copper cobalt oxide nanoparticles for the oxygen evolution reaction. <b>2020</b> , 8, 4290-4299	30
796	Carbon doping switching on the hydrogen adsorption activity of NiO for hydrogen evolution reaction. <b>2020</b> , 11, 590	85
795	Phosphorus Vacancies that Boost Electrocatalytic Hydrogen Evolution by Two Orders of Magnitude. <b>2020</b> , 59, 8181-8186	99
794	Reversible ternary nickel-cobalt-iron catalysts for intermittent water electrolysis. <b>2020</b> , 2, e12012	6
793	Prussian blue analog nanocubes tuning synthesis of coral-like Ni <sub>3</sub> S <sub>2</sub> @MIL-53(NiFeCo) core-shell nanowires array and boosting oxygen evolution reaction. <b>2020</b> , 451, 227295	8
792	Amorphous Ni-Fe-Mo Suboxides Coupled with Ni Network as Porous Nanoplate Array on Nickel Foam: A Highly Efficient and Durable Bifunctional Electrode for Overall Water Splitting. <b>2020</b> , 7, 1902034	50
791	Recent advancements in heterostructured interface engineering for hydrogen evolution reaction electrocatalysis. <b>2020</b> , 8, 6926-6956	75
790	Fundamental aspects and recent advances in transition metal nitrides as electrocatalysts for hydrogen evolution reaction: A review. <b>2020</b> , 24, 100805	102
789	Enhancing understandability and performance of flow electrode capacitive deionisation by optimizing configurational and operational parameters: A review on recent progress. <b>2020</b> , 240, 116660	21
788	Heterostructured NiMoNi nanoparticles decorated on reduced graphene oxide as efficient and robust electrocatalyst for hydrogen evolution reaction. <b>2020</b> , 165, 122-128	13
787	Imaging the Heterogeneity of the Oxygen Evolution Reaction on Gold Electrodes Operando: Activity is Highly Local. <b>2020</b> , 10, 6084-6093	9
786	Facile synthesis of cobalt phosphide nanoparticles as highly active electrocatalysts for hydrogen evolution reaction. <b>2020</b> , 600, 124925	7

785	Activated alumina as value-added byproduct from the hydrolysis of hierarchical nanoporous aluminum with pure water to generate hydrogen fuel. <b>2020</b> , 155, 189-196	7
784	Overview on recent developments on hydrogen energy: Production, catalysis, and sustainability. <b>2020</b> , 3-32	2
783	Controllable fabrication of graphitic nanocarbon encapsulating Fe <sub>x</sub> Ni <sub>y</sub> hybrids for efficient splitting of water. <b>2020</b> , 829, 154421	1
782	Free-standing phosphorous-doped molybdenum nitride in 3D carbon nanosheet towards hydrogen evolution at all pH values. <b>2020</b> , 50, 44-51	21
781	V-Doping Triggered Formation and Structural Evolution of Dendritic Ni <sub>3</sub> S <sub>2</sub> @NiO CoreShell Nanoarrays for Accelerating Alkaline Water Splitting. <b>2020</b> , 8, 6222-6233	28
780	The influence of lateral flake size in graphene/graphite paste electrodes: an electroanalytical investigation. <b>2020</b> , 12, 2133-2142	6
779	Acceleration of ammonium phosphate hydrolysis using TiO <sub>2</sub> microspheres as a catalyst for hydrogen production. <b>2020</b> , 2, 2080-2086	6
778	Effect of microstructure and internal stress on hydrogen absorption into Ni thin film electrodes during alkaline water electrolysis. <b>2020</b> , 340, 135970	5
777	Investigation of PEM electrolyzer modeling: Electrical domain, efficiency, and specific energy consumption. <b>2020</b> , 45, 14625-14639	32
776	Visualization of bubble dynamic behaviors during photoelectrochemical water splitting with TiO <sub>2</sub> photoelectrode. <b>2020</b> , 347, 136230	3
775	Is the H <sub>2</sub> economy realizable in the foreseeable future? Part I: H <sub>2</sub> production methods. <b>2020</b> , 45, 13777-13788	88
774	Current status, research trends, and challenges in water electrolysis science and technology. <b>2020</b> , 45, 26036-26058	128
773	Analysis of onsite HHO gas generation system. <b>2020</b> , 45, 14218-14231	16
772	Recent progress of precious-metal-free electrocatalysts for efficient water oxidation in acidic media. <b>2020</b> , 51, 113-133	21
771	The coupling of experiments with density functional theory in the studies of the electrochemical hydrogen evolution reaction. <b>2020</b> , 8, 8783-8812	15
770	A size-dependent financial evaluation of green hydrogen-oxygen co-production. <b>2021</b> , 163, 2165-2177	10
769	Active Edge Site Exposed Ni(OH) <sub>2</sub> Nanosheets on Stainless Steel Mesh as a Versatile Electrocatalyst for the Oxidation of Urea, Hydrazine, and Water. <b>2021</b> , 13, 1165-1174	4
768	An account of the strategies to enhance the water splitting efficiency of noble-metal-free electrocatalysts. <b>2021</b> , 59, 160-190	18

767	High-performance proton-exchange membrane water electrolysis using a sulfonated poly(arylene ether sulfone) membrane and ionomer. <b>2021</b> , 620, 118871	22
766	Tuning the electronic structure of the earth-abundant electrocatalysts for oxygen evolution reaction (OER) to achieve efficient alkaline water splitting [A review]. <b>2021</b> , 56, 299-342	44
765	Fundamental Insights into Walnut Shell Bio-Oil Electrochemical Conversion: Reaction Mechanism and Product Properties. <b>2021</b> , 14, 322-332	1
764	Techno-economic assessment of various hydrogen production methods - A review. <b>2021</b> , 319, 124175	64
763	Environmental aspects of fuel cells: A review. <b>2021</b> , 752, 141803	114
762	Increasing the efficiency of hydrogen production from solar powered water electrolysis. <b>2021</b> , 135, 110255	58
761	MxOy/M/graphene coated multi-shelled nano-sphere as Bi-functional electrocatalysts for hydrogen and oxygen evolution. <b>2021</b> , 46, 341-356	7
760	Hydrogen production on demand by redox-mediated electrocatalysis: A kinetic study. <b>2021</b> , 407, 126721	14
759	Nanostructured NiCo alloy electrodes for both hydrogen and oxygen evolution reaction in alkaline electrolyzer. <b>2021</b> , 46, 10082-10092	15
758	A novel hybrid energy system for hydrogen production and storage in a depleted oil reservoir. <b>2021</b> , 46, 18020-18031	4
757	“The Fe Effect” A review unveiling the critical roles of Fe in enhancing OER activity of Ni and Co based catalysts. <b>2021</b> , 80, 105514	138
756	Recent advances in non-precious metal electrocatalysts for pH-universal hydrogen evolution reaction. <b>2021</b> , 6, 458-478	22
755	A review of pulse electrolysis for efficient energy conversion and chemical production. <b>2021</b> , 59, 69-82	6
754	Recent progress on synthetic strategies and applications of transition metal phosphides in energy storage and conversion. <b>2021</b> , 47, 4404-4425	47
753	Dimensionless approach of a polymer electrolyte membrane water electrolysis: Advanced analytical modelling. <b>2021</b> , 481, 228858	4
752	In operando activation of alkaline electrolyzer by ruthenium spontaneous deposition. <b>2021</b> , 25, 1019-1027	1
751	Effects of the operation mode on the degradation behavior of anion exchange membrane water electrolyzers. <b>2021</b> , 481, 229093	10
750	A review: Target-oriented transition metal phosphide design and synthesis for water splitting. <b>2021</b> , 46, 5131-5149	22

749	Al, Fe-codoped CoP nanoparticles anchored on reduced graphene oxide as bifunctional catalysts to enhance overall water splitting. <b>2021</b> , 421, 127856	15
748	Tuning electronic structure of ZnO nanowires via 3d transition metal dopants for improved photo-electrochemical water splitting: An ab initio study. <b>2021</b> , 26, 101929	4
747	Magnetic field enhancement of electrochemical hydrogen evolution reaction probed by magneto-optics. <b>2021</b> , 46, 3346-3353	7
746	Recent Advancement on Anion Exchange Membranes for Fuel Cell and Water Electrolysis. <b>2021</b> , 8, 36-45	21
745	Effects of hydrogenation temperature on room-temperature compressive properties of CMHT-treated Ti6Al4V alloy. <b>2021</b> , 72, 132-143	6
744	Partial-Single-Atom, Partial-Nanoparticle Composites Enhance Water Dissociation for Hydrogen Evolution. <b>2021</b> , 8, 2001881	39
743	Hybrid Organic/Inorganic Photocathodes Based on WS <sub>2</sub> Flakes as Hole Transporting Layer Material. <b>2021</b> , 2, 2000098	6
742	Recent developments in hydrogen fuel cells: Strengths and weaknesses. <b>2021</b> , 431-456	1
741	Applications of reticular diversity in metal-organic frameworks: An ever-evolving state of the art. <b>2021</b> , 430, 213655	17
740	Co <sub>2</sub> (OH) <sub>3</sub> Cl and MOF mediated synthesis of porous Co <sub>3</sub> O <sub>4</sub> /NC nanosheets for efficient OER catalysis. <b>2021</b> , 542, 148739	16
739	Stability of ceramic matrix materials in molten hydroxide under oxidizing and reducing conditions. <b>2021</b> , 46, 14898-14912	
738	Water-Fed Hydroxide Exchange Membrane Electrolyzer Enabled by a Fluoride-Incorporated Nickel-Iron Oxyhydroxide Oxygen Evolution Electrode. <b>2021</b> , 11, 264-270	27
737	FeS <sub>2</sub> -anchored transition metal single atoms for highly efficient overall water splitting: a DFT computational screening study. <b>2021</b> , 9, 2438-2447	23
736	Formation of FeOOH Nanosheets Induces Substitutional Doping of CeO <sub>2</sub> with High-Valence Ni for Efficient Water Oxidation. <b>2021</b> , 11, 2002731	45
735	Decoupled amphoteric water electrolysis and its integration with Mn/Zn battery for flexible utilization of renewables. <b>2021</b> , 14, 883-889	15
734	Boosting hydrogen generation by anodic oxidation of iodide over Ni-Co(OH) <sub>2</sub> nanosheet arrays. <b>2021</b> , 3, 604-610	5
733	Promising pathways: The geographic and energetic potential of power-to-x technologies based on regeneratively obtained hydrogen. <b>2021</b> , 138, 110644	15
732	Tailoring Binding Abilities by Incorporating Oxophilic Transition Metals on 3D Nanostructured Ni Arrays for Accelerated Alkaline Hydrogen Evolution Reaction. <b>2021</b> , 143, 1399-1408	55

731	Assessment of integrated energy systems for the production and use of renewable methanol by water electrolysis and CO <sub>2</sub> hydrogenation. <b>2021</b> , 285, 119160	31
730	Biohydrogen and biogas production from mashed and powdered vegetable residues by an enriched microflora in dark fermentation. <b>2021</b> , 46, 14073-14082	7
729	Flame spray pyrolysis made Pt/TiO <sub>2</sub> photocatalysts with ultralow platinum loading and high hydrogen production activity. <b>2021</b> , 38, 6503-6511	8
728	Optimization of catalyst-coated membranes for enhancing performance in proton exchange membrane electrolyzer cells. <b>2021</b> , 46, 1155-1162	4
727	Electro-synthesis of tungsten carbide containing catalysts in molten salt for efficiently electrolytic hydrogen generation assisted by urea oxidation. <b>2021</b> , 46, 14932-14943	14
726	Forecasting hydrogen production potential in islamabad from solar energy using water electrolysis. <b>2021</b> , 46, 1671-1681	13
725	Direct electrodeposition of Ni-Co-S on carbon paper as an efficient cathode for anion exchange membrane water electrolyzers. <b>2021</b> , 45, 1918-1931	6
724	Enhanced activity and stability of Co-Ni-P-B catalyst for the hydrogen evolution reaction via predeposition of Co-Ni on a Cu substrate. <b>2021</b> , 359, 35-42	8
723	Advances in polymer-based composites for solar energy conversion to chemical fuels. <b>2021</b> , 195-213	1
722	Review Electrochemical Discharge Machining: Gas Film Electrochemical Aspects, Stability Parameters, and Research Work. <b>2021</b> , 168, 013503	8
721	Mixed Transition Metal Oxides for Photoelectrochemical Hydrogen Production. <b>2021</b> , 279-292	
720	Microbial Degradation for the Production of Value-Added Compounds: Biohydrogen from Dark Fermentation and Microbial Electrolysis Cells. <b>2021</b> , 219-250	1
719	Tuning of PtCo nanoparticle motifs for enhancing the HOR performance in alkaline media. <b>2021</b> , 9, 15415-15436	
718	Atomic heterointerface engineering overcomes the activity limitation of electrocatalysts and promises highly-efficient alkaline water splitting.	34
717	Perspective on intermetallics towards efficient electrocatalytic water-splitting. <b>2021</b> , 12, 8603-8631	21
716	Challenges in the use of hydrogen for maritime applications. <b>2021</b> , 14, 815-843	37
715	Hydrogen production via electrolysis: Mathematical modeling approach. <b>2021</b> , 199-235	1
714	Technologies for renewable hydrogen production. <b>2021</b> , 157-198	1

713	Heterometallic coordination polymers as heterogeneous electrocatalysts. <b>2021</b> , 8, 2634-2649	9
712	How oxidation state and lattice distortion influence the oxygen evolution activity in acid of iridium double perovskites. <b>2021</b> , 9, 2980-2990	15
711	Non-precious cobalt phthalocyanine-embedded iron ore electrocatalysts for hydrogen evolution reactions. <b>2021</b> , 5, 1448-1457	10
710	Renewable hydrogen production by water electrolysis. <b>2021</b> , 271-313	3
709	Ni(OH) <sub>2</sub> /Ag hybrid nanosheet array with ultralow Ag loading as a highly efficient and stable electrocatalyst for hydrogen evolution reaction. <b>2021</b> , 45, 13286-13292	1
708	Nanoporous Ni-Al alloy by De-alloying for Electrocatalytic hydrogen Evolution Reaction. 639, 012002	
707	Surface self-reconstruction of nickel foam triggered by hydrothermal corrosion for boosted water oxidation. <b>2021</b> , 46, 1501-1508	10
706	1T/1T'-dominated WSe <sub>2</sub> with stabilized oxygen dopants for efficient and durable hydrogen evolution. <b>2021</b> , 9, 13490-13495	2
705	Selective Synthesis of Bismuth or Bismuth Selenide Nanosheets from a Metal Organic Precursor: Investigation of their Catalytic Performance for Water Splitting. <b>2021</b> , 60, 1449-1461	9
704	The electronic structure of transition metal oxides for oxygen evolution reaction. <b>2021</b> , 9, 19465-19488	19
703	Evaluation of Diaphragms and Membranes as Separators for Alkaline Water Electrolysis. <b>2021</b> , 168, 014510	11
702	Controllable atomic defect engineering in layered Ni <sub>x</sub> Fe <sub>1-x</sub> (OH) <sub>2</sub> nanosheets for electrochemical overall water splitting. <b>2021</b> , 9, 14432-14443	30
701	Recognition of Surface Oxygen Intermediates on NiFe Oxyhydroxide Oxygen-Evolving Catalysts by Homogeneous Oxidation Reactivity. <b>2021</b> , 143, 1493-1502	32
700	Hydrogen energy. <b>2021</b> , 339-365	1
699	Highly efficient H <sub>2</sub> production and size-selective AgCl synthesis via electrolytic cell design.	1
698	An Innovative 500 W Alkaline Water Electrolyser System for the Production of Ultra-Pure Hydrogen and Oxygen Gases. <b>2021</b> , 14, 526	2
697	Electrochemical stability of stainless-steel-made anode for alkaline water electrolysis: Surface catalyst nanostructures and oxygen evolution overpotentials under applying potential cycle loading. <b>2021</b> , 122, 106902	8
696	Insights into the phenomenon of Bubble-free electrocatalytic oxygen evolution from water. <b>2021</b> , 5, 808-819	8

695	Decoupled electrochemical water-splitting systems: a review and perspective. <b>2021</b> , 14, 4740-4759	42
694	Boosting the oxygen evolution activity in non-stoichiometric praseodymium ferrite-based perovskites by A site substitution for alkaline electrolyser anodes. <b>2021</b> , 5, 154-165	4
693	Durability of anion exchange membrane water electrolyzers. <b>2021</b> , 14, 3393-3419	45
692	Fluorine-doping-assisted vacancy engineering for efficient electrocatalyst toward hydrogen production.	3
691	The Effect of Ni-Modified LSFCO Promoting Layer on the Gas Produced through Co-Electrolysis of CO <sub>2</sub> and H <sub>2</sub> O at Intermediate Temperatures. <b>2021</b> , 11, 56	0
690	Effect of same chloromethylation and sulfonation process on the ion exchange membranes in terms of polymer types and ionic properties. <b>2021</b> , 27, 1243-1254	2
689	Adding the activated carbon of rice husk to increase hydrogen production on water electrolysis. <b>2021</b> , 1034, 012075	
688	Recent advances on electrocatalytic and photocatalytic seawater splitting for hydrogen evolution. <b>2021</b> , 46, 9087-9100	26
687	Analysis of the hydrogen evolution reaction at Ni micro-patterned electrodes. <b>2021</b> , 368, 137678	5
686	Effect of electrolyte flow on a gas evolution electrode. <b>2021</b> , 11, 4677	5
685	Delivering the Full Potential of Oxygen Evolving Electrocatalyst by Conditioning Electrolytes at Near-Neutral pH. <b>2021</b> , 14, 1554-1564	7
684	A novel exergy-based assessment on a multi-production plant of power, heat and hydrogen: integration of solid oxide fuel cell, solid oxide electrolyzer cell and Rankine steam cycle.	0
683	Electrochemical Water Splitting. <b>2021</b> , 533-555	1
682	On the behavior of a water electrolysis cell in a DC circuit. <b>2021</b> , 42, 035201	
681	Electrodeposition of NiBe micro/nano urchin-like structure as an efficient electrocatalyst for overall water splitting. <b>2021</b> , 46, 9394-9405	24
680	Efficient Oxygen Evolution Electrocatalysis on CaFe <sub>2</sub> O <sub>4</sub> and Its Reaction Mechanism. <b>2021</b> , 4, 3057-3066	10
679	Ionomer Optimization for Water Uptake and Swelling in Anion Exchange Membrane Electrolyzer: Hydrogen Evolution Electrode. <b>2021</b> , 168, 024503	9
678	Mitigating Bubble Traffic in Gas-Evolving Electrodes via Spinodally Derived Architectures. <b>2021</b> , 13, 8528-8537	5

677	Economic Manganese-Oxide-Based Anodes for Efficient Water Oxidation: Rapid Synthesis and In Situ Transmission Electron Microscopy Monitoring. <b>2021</b> , 11, 2511-2523	3
676	A Review of Inorganic Photoelectrode Developments and Reactor Scale-Up Challenges for Solar Hydrogen Production. <b>2021</b> , 11, 2003286	20
675	Electrochemically active surface area controls HER activity for Fe <sub>x</sub> Ni <sub>100-x</sub> films in alkaline electrolyte. <b>2021</b> , 394, 104-112	12
674	Transition metal-based electrocatalysts for overall water splitting. <b>2021</b> ,	18
673	Effects of Topical Hydrogen Purification on Skin Parameters and Acne Vulgaris in Adult Women. <b>2021</b> , 9,	3
672	Modeling alkaline water electrolysis for power-to-x applications: A scheduling approach. <b>2021</b> , 46, 9303-9313	22
671	Effect of silica-core gold-shell nanoparticles on the kinetics of biohydrogen production and pollutant hydrogenation via organic acid photofermentation over enhanced near-infrared illumination.. <b>2021</b> , 46, 7821-7835	4
670	Intermediate Sr <sub>2</sub> Co <sub>1.5</sub> Fe <sub>0.5</sub> O <sub>6</sub> Tetragonal Structure between Perovskite and Brownmillerite as a Model Catalyst with Layered Oxygen Deficiency for Enhanced Electrochemical Water Oxidation. <b>2021</b> , 11, 4327-4337	8
669	Numerical Investigations into the Influence of Operational Parameters on Diffusion and Migration in Electrodialytic Nitrate Removal. <b>2021</b> , 60, 5014-5023	1
668	Electrochemically Decorated Iridium Electrodes with WS <sub>3</sub> Toward Improved Oxygen Evolution Electrocatalyst Stability in Acidic Electrolytes. 2000284	1
667	Performance assessment and economic perspectives of integrated PEM fuel cell and PEM electrolyzer for electric power generation. <b>2021</b> , 7, e06506	11
666	Beyond Platinum: Defects Abundant CoP <sub>3</sub> /Ni <sub>2</sub> P Heterostructure for Hydrogen Evolution Electrocatalysis. <b>2021</b> , 1, 2000027	20
665	A simple convertible electrolyzer in membraneless and membrane-based modes for understanding water splitting mechanism. <b>2021</b> , 487, 229353	6
664	Thermally Stabilized Soot for Supercapacitors. <b>2021</b> , 218, 2000617	
663	The Effect of Electric Current on the Production of Brown Gas using Hydrogen Fuel Generator with Seawater Electrolytes. <b>2021</b> , 709, 012001	
662	Next-generation biofuels and platform biochemicals from lignocellulosic biomass. <b>2021</b> , 45, 14145-14169	26
661	The effect of magnetic field on the dynamics of gas bubbles in water electrolysis. <b>2021</b> , 11, 9346	7
660	Numerical modeling and analysis of the effect of pressure on the performance of an alkaline water electrolysis system. <b>2021</b> , 287, 116554	16

659	Bubble growth and departure modes on wettable/non-wettable porous foams in alkaline water splitting. <b>2021</b> , 5, 887-900	15
658	Performance and cost analysis of liquid fuel production from H <sub>2</sub> and CO <sub>2</sub> based on the Fischer-Tropsch process. <b>2021</b> , 46, 101459	13
657	Educational electrolyzer prototype: Improving engineering students' knowledge in renewable energies. <b>2021</b> , 46, 15110-15123	2
656	NiFeP-MoO <sub>2</sub> hybrid nanorods on nickel foam as high-activity and high-stability electrode for overall water splitting. <b>2021</b> , 409, 128161	28
655	Facile modified polyol synthesis of FeCo nanoparticles with oxyhydroxide surface layer as efficient oxygen evolution reaction electrocatalysts. <b>2021</b> , 46, 15398-15409	3
654	Accelerating H Evolution by Anodic Semi-dehydrogenation of Tetrahydroisoquinolines in Water over Co O Nanoribbon Arrays Decorated Nickel Foam. <b>2021</b> , 27, 7502-7506	2
653	Usage of on-demand oxyhydrogen gas as clean/renewable fuel for combustion applications: a review. <b>2021</b> , 18, 1405-1429	2
652	Scanning Electrochemical Cell Microscope Study of Individual H <sub>2</sub> Gas Bubble Nucleation on Platinum: Effect of Surfactants. <b>2021</b> , 49, e21055-e21064	2
651	Investigation of hydrogen production by sulfur-iodine thermochemical water splitting cycle using renewable energy source. <b>2021</b> , 45, 14845-14869	5
650	Polymer electrolyte electrolysis: A review of the activity and stability of non-precious metal hydrogen evolution reaction and oxygen evolution reaction catalysts. <b>2021</b> , 139, 110709	19
649	Pulsed water electrolysis: A review. <b>2021</b> , 377, 138052	1
648	Towards the Hydrogen Economy: A Review of the Parameters That Influence the Efficiency of Alkaline Water Electrolyzers. <b>2021</b> , 14, 3193	11
647	Immobilized Ru-Pincer Complexes for Continuous Gas-Phase Low-Temperature Methanol Reforming-Improving the Activity by a Second Ru-Complex and Variation of Hydroxide Additives. <b>2021</b> , 2021, 1745-1751	1
646	A setaria-shaped Pd/Ni-NC electrocatalyst for high efficient hydrogen evolution reaction. <b>2021</b> , 6, 100101	4
645	Desalination of brackish water by electrodeionization: Experimental study and mathematical modeling. <b>2021</b> , 504, 114803	2
644	Challenging the Durability of Intermetallic Mo-Ni Compounds in the Hydrogen Evolution Reaction. <b>2021</b> , 13, 23616-23626	5
643	Review: CO <sub>2</sub> Attenuation: Electrochemical Methods and Perspectives. <b>2021</b> , 168, 056515	1
642	Renewable methanol production: Understanding the interplay between storage sizing, renewable mix and dispatchable energy price. <b>2021</b> , 2, 100021	5

641	Benchmarking of oxygen evolution catalysts on porous nickel supports. <b>2021</b> , 5, 1281-1300	23
640	Two new polyoxoniobosilicate-based compounds: Syntheses, structures, characterizations and their catalytic properties for epoxidation and water oxidation. <b>2021</b> , 297, 122029	1
639	A review of geothermal energy-driven hydrogen production systems. <b>2021</b> , 22, 100854	23
638	Atomic Sulfur Filling Oxygen Vacancies Optimizes H Absorption and Boosts the Hydrogen Evolution Reaction in Alkaline Media. <b>2021</b> , 133, 14236-14242	7
637	Comprehensive Understandings into Complete Reconstruction of Precatalysts: Synthesis, Applications, and Characterizations. <b>2021</b> , 33, e2007344	70
636	Promoted electrocatalytic hydrogen evolution performance by constructing Ni <sub>12</sub> P <sub>5</sub> /Ni <sub>2</sub> P heterointerfaces. <b>2021</b> , 46, 17097-17105	5
635	Electrochemical Catalysts for Green Hydrogen Energy. <b>2021</b> , 2, 2100019	2
634	A review on CO <sub>2</sub> hydrogenation to lower olefins: Understanding the structure-property relationships in heterogeneous catalytic systems. <b>2021</b> , 47, 101506	20
633	Elucidating the Role of Hydroxide Electrolyte on Anion-Exchange-Membrane Water Electrolyzer Performance. <b>2021</b> , 168, 054522	18
632	2D-Layered Non-Precious Electrocatalysts for Hydrogen Evolution Reaction: Fundamentals to Applications. <b>2021</b> , 11, 689	6
631	Silicon oxide-protected nickel nanoparticles as biomass-derived catalysts for urea electro-oxidation. <b>2021</b> , 589, 56-64	12
630	Levelling renewable power output using hydrogen-based storage systems: A techno-economic analysis. <b>2021</b> , 37, 102413	4
629	Interleaved biphasic p/n blended copper indium selenide photoelectrode and its application in pulse-driven photoelectrochemical water splitting. <b>2021</b> , 285, 119839	9
628	Atomic Sulfur Filling Oxygen Vacancies Optimizes H Absorption and Boosts the Hydrogen Evolution Reaction in Alkaline Media. <b>2021</b> , 60, 14117-14123	44
627	Metal chalcogenides: An emerging material for electrocatalysis. <b>2021</b> , 9, 050902	5
626	Voltage losses in zero-gap alkaline water electrolysis. <b>2021</b> , 497, 229864	13
625	Methodology for multi-objective optimization of wind turbine/battery/electrolyzer system for decentralized clean hydrogen production using an adapted power management strategy for low wind speed conditions. <b>2021</b> , 238, 114125	9
624	Boosting electrocatalytic activity toward alkaline hydrogen evolution by strongly coupled ternary Ni <sub>3</sub> S <sub>4</sub> /Ni/Ni(OH) <sub>2</sub> hybrid. <b>2021</b> , 382, 138342	2

623	Experimental investigation of spark plug gap on performance and emission of single cylinder 4S SI engine with Hydroxygen as an additive. <b>2021</b> , 87, 393-407	
622	Manipulating the Coordination Chemistry of Ru <sup>2+</sup> N(O) <sup>+</sup> C Moieties for Fast Alkaline Hydrogen Evolution Kinetics. <b>2021</b> , 31, 2100698	22
621	Encapsulation of Pt nanocatalyst with N-containing carbon layer for improving catalytic activity and stability in the hydrogen evolution reaction. <b>2021</b> , 46, 21454-21461	6
620	Heterogeneous Bimetallic Mo-NiP <sub>x</sub> /NiS <sub>y</sub> as a Highly Efficient Electrocatalyst for Robust Overall Water Splitting. <b>2021</b> , 31, 2101532	32
619	A review of alkaline solid polymer membrane in the application of AEM electrolyzer: Materials and characterization. <b>2021</b> , 45, 18337	9
618	Clean and Affordable Hydrogen Fuel from Alkaline Water Splitting: Past, Recent Progress, and Future Prospects. <b>2021</b> , 33, e2007100	144
617	Signalling the cost of intermittency: What is the value of curtailed renewable power?. <b>2021</b> , 302, 126998	2
616	Surface Modification of Electrocatalyst for Optimal Adsorption of Reactants in Oxygen Evolution Reaction. <b>2021</b> , 11, 717	1
615	In Situ Decorated Ni Metallic Layer with CoS-Layered Thin Films via a Layer-by-Layer Strategy Using Pulsed Laser Deposition for Enhanced Electrocatalytic OER. <b>2021</b> , 60, 8946-8957	4
614	Preparation of Ni-Fe alloy foam for oxygen evolution reaction. <b>2021</b> , 49, 827-834	1
613	High-Performance Bifunctional Ni-Fe-S Catalyst in situ Synthesized within Graphite Intergranular Nanopores for Overall Water Splitting. <b>2021</b> , 14, 3131-3138	1
612	Atomic interface engineering: Strawberry-like RuO <sub>2</sub> /C hybrids for efficient hydrogen evolution from ammonia borane and water. <b>2021</b> , 46, 22397-22408	2
611	Two-dimensional triazine-based porous framework as a novel metal-free bifunctional electrocatalyst for zinc-air battery. <b>2021</b> , 591, 253-263	6
610	Hydrogen Environmental Benefits Depend on the Way of Production: An Overview of the Main Processes Production and Challenges by 2050. <b>2021</b> , 2, 2100093	3
609	Iodide Oxidation Reaction Catalyzed by Ruthenium <sup>II</sup> in Surface Alloy Oxide for Efficient Production of Hydrogen and Iodine Simultaneously. <b>2021</b> , 9, 8803-8812	1
608	Highly Dispersed Pt Nanoparticles Embedded in N-Doped Porous Carbon for Efficient Hydrogen Evolution. <b>2021</b> , 16, 1878-1881	4
607	Layered Oxides SrLaFe <sub>1-x</sub> CoxO <sub>4</sub> -[(x=0)] as Bifunctional Electrocatalysts for Water-Splitting. <b>2021</b> , 13, 3510-3516	6
606	Recent advances in CO <sub>2</sub> hydrogenation to value-added products [Current challenges and future directions. <i>Progress in Energy and Combustion Science</i> , <b>2021</b> , 85, 100905	33.6 31

605	The construction of stable Ru/RuO <sub>2</sub> porous reticular heterostructure with highly efficient electrocatalytic activity for oxygen evolution reaction. <b>2021</b> , 177, 111201	3
604	Superiority of the (100) Over the (111) Facets of the Nitrides for Hydrogen Evolution Reaction. 1	1
603	Electrosynthesis of hypochlorous acid in a filter-press electrolyzer and its modeling in dilute chloride solutions. <b>2021</b> , 892, 115286	2
602	Increasing the performance of an anion-exchange membrane electrolyzer operating in pure water with a nickel-based microporous layer. <b>2021</b> , 5, 1776-1799	8
601	Investigation of the synergistic effect on cobalt oxide modified silver surface for electrocatalytic hydrogen evolution reaction. <b>2021</b> , 869, 159324	6
600	Bifunctional Electrolyzation for Simultaneous Organic Pollutant Degradation and Hydrogen Generation. <b>2021</b> , 1, 1360-1368	2
599	A critical review of energy storage technologies for microgrids. 1	1
598	Magnetohydrodynamic Numerical Simulation of Bubble-Bubble Interaction in Alkaline Water Electrolysis with Magnetic Field. <b>2021</b> , 141, 541-546	2
597	Molecular Control of Carbon-Based Oxygen Reduction Electrocatalysts through Metal Macrocyclic Complexes Functionalization. <b>2021</b> , 11, 2100866	6
596	Noble-Metal-Free Multicomponent Nanointegration for Sustainable Energy Conversion. <b>2021</b> , 121, 10271-10366	1
595	Metal-Organic Framework Derived Nanostructured Bifunctional Electrocatalysts for Water Splitting. <b>2021</b> , 8, 3782	0
594	Cobalt Telluride: A Highly Efficient Trifunctional Electrocatalyst for Water Splitting and Oxygen Reduction. <b>2021</b> , 4, 8158-8174	4
593	Co-Ni alloy nanoparticles supported by carbon nanofibers for hydrogen evolution reaction. <b>2021</b> , 868, 159172	8
592	Progress and challenges pertaining to the earthy-abundant electrocatalytic materials for oxygen evolution reaction. <b>2021</b> , 28, e00252	4
591	Hexagonal Nickel as a Highly Durable and Active Catalyst for Hydrogen Evolution. <b>2021</b> , 11, 8798-8806	2
590	Energy, exergy and environmental assessment of partial fuel substitution with hydroxy powered by a thermoelectric generator in low displacement diesel engines. <b>2021</b> , 3, 100086	1
589	Advances in Magnetic-Field Assisted Photoelectrochemical Systems for Highly Efficient Conversion of Renewable Energy. <b>2021</b> , 8, 2100446	2
588	Stability challenges of electrocatalytic oxygen evolution reaction: From mechanistic understanding to reactor design. <b>2021</b> , 5, 1704-1731	62

587	Electrocatalytic acidic oxygen evolution reaction: From nanocrystals to single atoms. <b>2021</b> , 2, e106	5
586	Numerical Analysis of Hydrogen Bubble Behavior in a Zero-Gap Alkaline Water Electrolyzer Flow Channel. <b>2021</b> , 60, 12429-12446	1
585	Mini Review on Active Sites in Ce-Based Electrocatalysts for Alkaline Water Splitting.	8
584	Effect of Conductivity on In Situ Deactivation of Catechol-Boronate Complexation-Based Reversible Smart Adhesive. <b>2021</b> , 22, 4004-4015	2
583	Interaction of graphene, MnO <sub>2</sub> , and Ca <sup>2+</sup> for enhanced biomimetic, bubble-free oxygen evolution reaction at mild pH. <b>2021</b> , 46, 28397-28405	0
582	Rare cis-Dioxido Uranyl Framework Crystalline Complexes: Synthesis, Structure, Characterization and Properties. <b>2021</b> , 6, 8133-8139	0
581	Strategies for the enhanced water splitting activity over metal-organic frameworks-based electrocatalysts and photocatalysts. <b>2021</b> , 15, 100124	8
580	Operational Characteristics of High-Performance kW class Alkaline Electrolyzer Stack for Green Hydrogen Production. <b>2021</b> , 12, 302-307	1
579	Recent Progress in Mixed-Matrix Membranes for Hydrogen Separation. <b>2021</b> , 11,	7
578	Optimizing trading decisions of wind power plants with hybrid energy storage systems using backwards approximate dynamic programming. <b>2021</b> , 238, 108155	4
577	Synergistic coupling of CoFe-layered double hydroxide nanosheet arrays with reduced graphene oxide modified Ni foam for highly efficient oxygen evolution reaction and hydrogen evolution reaction. <b>2021</b> , 46, 27529-27542	11
576	Rational Design of Superior Electrocatalysts for Water Oxidation: Crystalline or Amorphous Structure?. <b>2021</b> , 1, 2100030	22
575	Unraveling the Synergy of Chemical Hydroxylation and the Physical Heterointerface upon Improving the Hydrogen Evolution Kinetics. <b>2021</b> , 15, 15017-15026	14
574	Recent decoupling and coupling strategies for water splitting.	0
573	Atomic level engineering of noble metal nanocrystals for energy conversion catalysis. <b>2021</b> , 63, 604-604	1
572	Electrochemical Visualization of Gas Bubbles on Superaerophobic Electrodes Using Scanning Electrochemical Cell Microscopy. <b>2021</b> , 93, 12337-12345	6
571	Tracing Resistances of Anion Exchange Membrane Water Electrolyzer during Long-term Stability Tests. <b>2021</b> , 12, 358-364	1
570	Single Atom-Modified Hybrid Transition Metal Carbides as Efficient Hydrogen Evolution Reaction Catalysts. 2104285	9

- 569 Facile fabrication of bimetallic Fe<sub>2</sub>P/Ni<sub>2</sub>P heterostructure for boosted oxygen evolution. **2021**, 32, 23420-23428
- 568 Green bioprocessing of protein from *Chlorella vulgaris* microalgae towards circular bioeconomy. **2021**, 333, 125197 5
- 567 Exceptionally Robust Face-Sharing Motifs Enable Efficient and Durable Water Oxidation. **2021**, 33, e2103392 8
- 566 Recent advances on two-dimensional NiFe-LDHs and their composites for electrochemical energy conversion and storage. **2021**, 872, 159649 16
- 565 A Review on Experimental Identification of Active Sites in Model Bifunctional Electrocatalytic Systems for Oxygen Reduction and Evolution Reactions. **2021**, 8, 3433-3456 4
- 564 Ru<sub>2</sub>P nanofibers for high-performance anion exchange membrane water electrolyzer. **2021**, 420, 130491 5
- 563 A Review of Hydrogen as a Fuel in Internal Combustion Engines. **2021**, 14, 6209 7
- 562 Quantitative Evaluation of the Activity of Low-Spin Tetravalent Nickel Ion Sites for the Oxygen Evolution Reaction. 2
- 561 Understanding the Enhancement of Electrocatalytic Activity toward Hydrogen Evolution in Alkaline Water Splitting by Anodically Formed Oxides on Ni and C-containing Ni. **2021**, 8, 3371-3378 2
- 560 Recent development in electrocatalysts for hydrogen production through water electrolysis. **2021**, 46, 32284-32317 39
- 559 FeNiP three-dimensional oriented nanosheet array bifunctional catalysts with better full water splitting performance than the full noble metal catalysts. **2021**, 608, 2192-2192 1
- 558 PdZrO/rGO-FTO as an effective modified anode and cathode toward methanol electro-oxidation and hydrogen evolution reactions. **2021**, 32, 0
- 557 Construction of Fe(OH)<sub>3</sub>-ZnO/NF nanotube arrays with enhanced performance for water splitting. **2021**, 2011, 012068
- 556 Furfural and hydrogen production from corncob via tandem chemical and electrochemical approach. **2021**, 15, 100790 2
- 555 Operational parameters correlated with the long-term stability of anion exchange membrane water electrolyzers. **2021**, 46, 31550-31562 2
- 554 Water availability and water usage solutions for electrolysis in hydrogen production. **2021**, 315, 128124 3
- 553 Experimental investigation on bubble growth and detachment characteristics on vertical microelectrode surface under electrode-normal magnetic field in water electrolysis. **2021**, 2
- 552 Catalytic solar hydrolysis of the *Chlamydomonas reinhardtii* microalgae. **2021**, 152, 106183 0

551	Commercial anion exchange membrane water electrolyzer stack through non-precious metal electrocatalysts. <b>2021</b> , 292, 120170	11
550	Guaiacol Hydrogenation in Methanesulfonic Acid Using a Stirred Slurry Electrocatalytic Reactor: Mass Transport and Reaction Kinetics Aspects.	1
549	System Theoretical Study on the Effect of Variable Nonmetallic Doping on Improving Catalytic Activity of 2D-TiCO for Hydrogen Evolution Reaction. <b>2021</b> , 11,	1
548	Promotion for Full Water Splitting toward Vanadium-Incorporated MoO <sub>2</sub> /MoNi <sub>4</sub> Hybrid Nanoarrays.	2
547	Facile synthesis of cobalt modified 2D titanium carbide with enhanced hydrogen evolution performance in alkaline media. <b>2021</b> , 46, 32536-32545	6
546	Facile Preparation of Nickel Hydroxide Composite Material as Highly Efficient Electrocatalyst for Oxygen Evolution Reaction. <b>2021</b> , 219, 84-91	
545	Recent Progresses in Engineering of Ni and Co based Phosphides for Effective Electrocatalytic Water Splitting.	4
544	A comprehensive review on power-to-gas with hydrogen options for cleaner applications. <b>2021</b> , 46, 31511-31522	
543	Surface Defect Engineering on Perovskite Oxides as Efficient Bifunctional Electrocatalysts for Water Splitting. <b>2021</b> , 13, 42852-42860	8
542	Design considerations for industrial water electrolyzer plants. <b>2021</b> ,	2
541	Material libraries for electrocatalytic overall water splitting. <b>2021</b> , 444, 214049	21
540	Non-precious electrocatalysts for oxygen evolution reaction in anion exchange membrane water electrolysis: A mini review. <b>2021</b> , 131, 107118	5
539	Effect of water stoichiometry on deuterium isotope separation by anion exchange membrane water electrolysis. <b>2021</b> , 46, 33689-33695	2
538	Heterogeneous NiS@FeNiS@NF nanosheet arrays directly used as high efficiency bifunctional electrocatalyst for water decomposition. <b>2021</b> , 599, 300-312	17
537	Numerical simulation of continuum scale electrochemical hydrogen bubble evolution. <b>2021</b> , 98, 343-377	0
536	Color 3D printing of pulped yam utilizing a natural pH sensitive pigment. <b>2021</b> , 46, 102062	3
535	Co <sub>1-x</sub> S/N-doped graphene foam composite as efficient bifunctional electrocatalysts for the evolution reaction of oxygen and hydrogen. <b>2021</b> , 393, 139081	1
534	Dual-functional water splitting: Electro-fenton-like pollutants degradation from anode reaction and hydrogen fuel production from cathode reaction. <b>2021</b> , 394, 139122	1

533	Three-dimensional coupling numerical simulation of two-phase flow and electrochemical phenomena in alkaline water electrolysis. <b>2021</b> , 46, 35088-35101	2
532	Hollow and substrate-supported Prussian blue, its analogs, and their derivatives for green water splitting. <b>2021</b> , 42, 1843-1864	4
531	Cobalt tetrakisphosphate as an efficient bifunctional electrocatalyst for hybrid sodium-air batteries. <b>2021</b> , 89, 106485	5
530	Exceptional lattice-oxygen participation on artificially controllable electrochemistry-induced crystalline-amorphous phase to boost oxygen-evolving performance. <b>2021</b> , 297, 120484	8
529	Synergistic modulation of nanostructure and active sites: Ternary Ru&Fe-WO <sub>x</sub> electrocatalyst for boosting concurrent generations of hydrogen and formate over 500 mA cm <sup>-2</sup> . <b>2021</b> , 296, 120359	8
528	Hydrogen Production, Distribution, Storage and Power Conversion in a Hydrogen Economy - A Technology Review. <b>2021</b> , 8, 100172	16
527	Conductive metal-organic frameworks for electrochemical energy conversion and storage. <b>2021</b> , 446, 214119	19
526	Severe plastic deformed Pd-based metallic glass for superior hydrogen evolution in both acidic and alkaline media. <b>2021</b> , 204, 114145	3
525	Nanostructured NiCoS@NiCoO-reduced graphene oxide as an efficient hydrogen evolution electrocatalyst in alkaline electrolyte. <b>2021</b> , 601, 570-580	6
524	Micro-patterned graphite electrodes: An analysis and optimization of process parameters on hydrogen evolution in water electrolysis. <b>2021</b> , 305, 121542	0
523	Utilizing the charge-transfer model to design promising electrocatalysts. <b>2021</b> , 30, 100805	2
522	Electrochemically-active carbon nanotube coatings for biofouling mitigation: Cleaning kinetics and energy consumption for cathodic and anodic regimes. <b>2021</b> , 603, 391-397	4
521	Hydrazine hydrate-assisted adjustment of sulfur-rich MoS <sub>2</sub> as hydrogen evolution electrocatalyst. <b>2021</b> , 885, 160990	4
520	Effect of electrode spacing on hydrogen production using a home-made alkaline electrolyzer. <b>2022</b> , 306, 130841	4
519	Direct seawater electrolysis via synergistic acidification by inorganic precipitation and proton flux from bipolar membrane. <b>2022</b> , 429, 132383	2
518	Oxygen evolution reaction (OER) at nanostructured metal oxide electrocatalysts in water electrolyzers. <b>2021</b> , 61-81	2
517	On the Catalytic Activity and Corrosion Behavior of Polycrystalline Nickel in Alkaline Media in the Presence of Neutral and Reactive Gases. <b>2021</b> , 12, 146-164	2
516	Nb-Doped nickel nitride-derived catalysts for electrochemical water splitting.	1

515	Operational challenges for low and high temperature electrolyzers exploiting curtailed wind energy for hydrogen production. <b>2021</b> ,	11
514	Investigation on Hydrogen Evolution Reaction Performance of Porous Electrode Prepared by Laser Powder Bed Fusion.	
513	The prospects of developing a highly energy-efficient water electrolyser by eliminating or mitigating bubble effects. <b>2021</b> , 5, 1280-1310	7
512	Intense nano-interfacial interactivity stimulates the OER in a MOF-derived superhydrophilic CuO/NiO heterostructure.	2
511	Current Status of Water Electrolysis for Energy Storage. <b>2021</b> ,	
510	An economically sustainable bifunctional Ni@C catalyst in a solar-to-hydrogen device employing a CIGS submodule.	0
509	One-step synthesis of graphitic carbon-nitride doped with black-red phosphorus as a novel, efficient and free-metal bifunctional catalyst and its application for electrochemical overall water splitting. <b>2021</b> , 5, 3229-3239	1
508	Poly(arylene ether ketone)-based bipolar membranes for acid/alkaline water electrolysis applications. <b>2021</b> , 9, 5485-5496	4
507	Seawater electrolysis for hydrogen production: a solution looking for a problem?. <b>2021</b> , 14, 4831-4839	31
506	Power-to-methanol process: a review of electrolysis, methanol catalysts, kinetics, reactor designs and modelling, process integration, optimisation, and techno-economics. <b>2021</b> , 5, 3490-3569	6
505	Recent Advanced Study of Novel Electrode Materials. <b>2021</b> , 11, 200-216	
504	The in situ removal of surface molybdenum oxide for making binder-free porous Mo <sub>1.98</sub> C <sub>1.02</sub> film a more efficient electrocatalyst for alkaline rather than acidic hydrogen production.	1
503	Perspective on High-Rate Alkaline Water Splitting. <b>2021</b> , 3, 224-234	40
502	Status on Technologies for Hydrogen Production by Water Electrolysis. 423-450	10
501	Recent Advances in Non-Precious Metal-Based Electrodes for Alkaline Water Electrolysis. <b>2020</b> , 6, 336-355	34
500	Encyclopedia of Applied Electrochemistry. <b>2014</b> , 1039-1044	3
499	Interface Chemistry of Platinum-Based Materials for Electrocatalytic Hydrogen Evolution in Alkaline Conditions. <b>2020</b> , 453-473	2
498	Conductometric Titration to Analyze Nafion® 117 Conductivity. <b>2015</b> , 459-466	1

497	Perovskite Materials in Electrocatalysis. <b>2020</b> , 209-250	2
496	Catalyst Engineering for Electrochemical Energy Conversion from Water to Water: Water Electrolysis and the Hydrogen Fuel Cell. <b>2020</b> , 6, 653-679	30
495	Economic evaluation with uncertainty analysis using a Monte-Carlo simulation method for hydrogen production from high pressure PEM water electrolysis in Korea. <b>2017</b> , 42, 24612-24619	22
494	Methane decomposition to produce CO -free hydrogen and nano-carbon over metal catalysts: A review. <b>2020</b> , 45, 7981-8001	55
493	Electrochemical reduction of toluene to methylcyclohexane for use as an energy carrier. <b>2017</b> , 343, 156-160	17
492	High-performance alkaline water electrolysis using Aemion <sup>®</sup> anion exchange membranes. <b>2020</b> , 451, 227814	55
491	Heteroatom Modification of Nanoporous Nickel Surfaces for Electrocatalytic Water Splitting. <b>2020</b> , 3, 11298-11306	1
490	Electrodepositing ultra-thin Ni(OH) <sub>2</sub> amorphous film on Ni <sub>2</sub> P nanosheets array: an efficient strategy toward greatly enhanced alkaline hydrogen evolution reaction. <b>2018</b> , 42, 11285-11288	13
489	What is needed to deliver carbon-neutral heat using hydrogen and CCS?. <b>2020</b> , 13, 4204-4224	19
488	Production Methods of Stacks and Hydrogen with Associated Costs. <b>2015</b> ,	1
487	Cu <sub>2</sub> O bimetallic nanospheres embedded in graphene as excellent anode catalysts for electrocatalytic oxygen evolution reaction. <b>2019</b> , 14, 466-469	2
486	Growth and detachment of single hydrogen bubbles in a magnetohydrodynamic shear flow. <b>2017</b> , 2,	12
485	Inexpensive and Efficient Alkaline Water Electrolyzer with Robust Steel-Based Electrodes. <b>2020</b> , 167, 114513	5
484	Ionomer Optimization for Water Uptake and Swelling in Anion Exchange Membrane Electrolyzer: Oxygen Evolution Electrode. <b>2020</b> , 167, 164514	14
483	Hydrogen Production via Ultrasound-Aided Alkaline Water Electrolysis. <b>2014</b> , 2, 103-109	12
482	MoS <sub>2</sub> /CNFs derived from Electrospinning and Heat treatment as the Efficient Electrocatalyst for Hydrogen Evolution Reaction in Acidic Solution. <b>2018</b> , 56, 885-892	6
481	Synthesis and Characterization of the Cu <sub>0.72</sub> Co <sub>2.28</sub> O <sub>4</sub> Catalyst for Oxygen Evolution Reaction in an Anion Exchange Membrane Water Electrolyzer. <b>2020</b> , 58, 49-58	7
480	Green Synthetic Fuels: Renewable Routes for the Conversion of Non-Fossil Feedstocks into Gaseous Fuels and Their End Uses. <b>2020</b> , 13, 420	32

479	Decarbonization of the Iron and Steel Industry with Direct Reduction of Iron Ore with Green Hydrogen. <b>2020</b> , 13, 758	57
478	A Review on Membranes and Catalysts for Anion Exchange Membrane Water Electrolysis Single Cells. <b>2017</b> , 8, 183-196	27
477	A Review of Industrially Developed Components and Operation Conditions for Anion Exchange Membrane Water Electrolysis. <b>2017</b> , 8, 265-273	11
476	Hypotheses for Primary Energy Use, Electricity Use and CO <sub>2</sub> Emissions of Global Computing and Its Shares of the Total Between 2020 and 2030. <b>2020</b> , 15, 50-59	6
475	Synthesis of ZrO <sub>2</sub> Nanorods and Their Application as Membrane Materials. <b>2019</b> , 56, 541-548	4
474	An Analytical Model for the Electrolyser Performance Derived from Materials Parameters. <b>2017</b> , 05, 34-49	19
473	Hydrogen Production Technologies Overview. <b>2019</b> , 07, 107-154	99
472	Experimental Studies of the Effect of Electrolyte Strength, Voltage and Time on the Production of Brown (HHO) Gas Using Oxyhydrogen Generator. <b>2019</b> , 08, 64-80	5
471	Hydrogen Production from an Alkali Electrolyzer Operating with Egypt Natural Resources. <b>2015</b> , 06, 14-25	8
470	Synthesis and Characterization of CuCo <sub>2</sub> O <sub>4</sub> Nanofiber Electrocatalyst for Oxygen Evolution Reaction. <b>2016</b> , 49, 539-548	1
469	The Characteristics of Hydrogen Production According to Electrode Materials in Alkaline Water Electrolysis. <b>2015</b> , 24, 34-39	1
468	Finding the catalytically active sites on the layered tri-chalcogenide compounds CoPS and NiPS for hydrogen evolution reaction. <b>2021</b> , 23, 23967-23977	1
467	Current progressions in transition metal based hydroxides as bi-functional catalysts towards electrocatalytic total water splitting.	2
466	A self-healing catalyst for electrocatalytic and photoelectrochemical oxygen evolution in highly alkaline conditions. <b>2021</b> , 12, 5980	10
465	Gel-like State of Nickel Hydroxide Created by Electrochemical Aging under Alkaline Conditions. <b>2021</b> , 4, 10668-10681	0
464	Magnetohydrodynamic numerical simulation of bubble-bubble interaction in alkaline water electrolysis with magnetic field. <b>2021</b> , 214, e23349	
463	Aiding Time-Dependent Laser Ablation to Direct 1T-MoS <sub>2</sub> for an Improved Hydrogen Evolution Reaction.	3
462	Catalytic Decomposition of Methane to Hydrogen over Al <sub>2</sub> O <sub>3</sub> Supported Mono- and Bimetallic Catalysts. <b>2022</b> , 17, 1-12	0

461	On the Durability of Iridium-Based Electrocatalysts toward the Oxygen Evolution Reaction under Acid Environment. 2108465	8
460	Facile Synthesis of Copper Oxide-Cobalt Oxide/Nitrogen-Doped Carbon (Cu <sub>2</sub> O-Co <sub>3</sub> O <sub>4</sub> /CN) Composite for Efficient Water Splitting. <b>2021</b> , 11, 9974	20
459	Cosynergistic Molybdate Oxo-Anionic Modification of FeNi-Based Electrocatalysts for Efficient Oxygen Evolution Reaction. 2107342	4
458	Electrodeposited nickel-zinc alloy nanostructured electrodes for alkaline electrolyzer. <b>2021</b> ,	0
457	Revealing the effect of electrocatalytic performance boost during hydrogen evolution reaction on free-standing SWCNT film electrode. <b>2021</b> , 11, 19981	1
456	Analytical study of over-voltages in alkaline electrolysis and their parametric dependencies through a multi-physical model.	1
455	Engineered Thin Diffusion Layers for Anion-Exchange Membrane Electrolyzer Cells with Outstanding Performance. <b>2021</b> , 13, 50957-50964	4
454	Design, manufacturing, and operation of movable 2 × 10 kW size rSOC system. <b>2021</b> , 21, 477	1
453	Corrosion-resistant non-noble metal electrodes for PEM-type water electrolyzer. <b>2021</b> , 46, 38603-38611	2
452	N, H Dual-Doped Black Anatase TiO <sub>2</sub> Thin Films toward Significant Self-Activation in Electrocatalytic Hydrogen Evolution Reaction in Alkaline Media. 2100137	3
451	Comparative Life-Cycle-Assessment analysis of three major water electrolysis technologies while applying various energy scenarios for a greener hydrogen production. <b>2021</b> , 43, 102759	4
450	Probing active sites on MnPSe <sub>3</sub> and FePSe <sub>3</sub> tri-chalcogenides as a design strategy for better hydrogen evolution reaction catalysts. <b>2021</b> , 46, 37928-37938	3
449	Ionomer content optimization in nickel-iron-based anodes with and without ceria for anion exchange membrane water electrolysis. <b>2021</b> , 514, 230563	4
448	Comparative Environmental Impact Assessment of Nuclear-Based Hydrogen Production via MgCl <sub>2</sub> and CuCl Thermochemical Water Splitting Cycles. <b>2013</b> , 433-459	
447	The Effect of NaHCO <sub>3</sub> as Catalyst via Electrolysis. <b>2013</b> , 04, 65-68	
446	Analysis on Variation of Primary Elements of Stainless Steel Interacting with Alkali Solution. <b>2013</b> , 26, 522-527	
445	Zirfon as Separator Material for Water Electrolysis Under Specific Conditions. <b>2014</b> , 225-231	1
444	Elektrolyse von Wasser. <b>2015</b> , 363-472	

- 443 Encyclopedia of Membranes. **2015**, 1-3
- 442 Enriched Methane Production Through a Low Temperature Steam Reforming Reactor. **2016**, 23-35
- 441 2.?????????????????????????. **2016**, 84, 611-615
- 440 Design of Monitoring System on QDQ2-1 Type Water Electrolysis Hydrogen Equipment. **2016**, 06, 70-75
- 439 1.?????????????????????. **2017**, 85, 28-33 1
- 438 The quasi-perpetual electricity generating device based on ceramic fuel cell for closed systems. **2018**, 6, 142-150
- 437 Corrosion-Electrochemical Behaviour of Low-Alloy Steel in Alkaline Media. **2018**, 12, 258-262 2
- 436 A Review on Production of Hydrogen from Renewable Sources and Applications for Fuel Cell Vehicles. **2018**, 1, 63-68 3
- 435 Development and Experimental Validation of a Model to Simulate an Alkaline Electrolysis System for Production of Hydrogen Powered by Renewable Energy Sources. **2019**, 358-368
- 434 İn Linyitinden Elektroliz Yöntemi ile Hidrojen Üretiminde Etkili Parametrelerin Etkisinin İncelenmesi. **2019**, 7, 957-968 0
- 433 Adaptability Assessment of Hydrogen Energy Storage System Based on Proton Exchange Membrane Fuel Cell under the Scenarios of Peaking Shaving and Frequency Regulation. **2021**,
- 432 Constructing the Fe/Cr double (oxy)hydroxides on Fe<sub>3</sub>O<sub>4</sub> for Boosting the Electrochemical Oxygen Evolution in Alkaline Seawater and Domestic Sewage. **2021**, 120847 3
- 431 Review Challenges and Opportunities for Increased Current Density in Alkaline Electrolysis by Increasing the Operating Temperature. 6
- 430 Influence of biomass waste from agro-industries on obtaining energetic gases assisted by chronoamperometric process. **2021**, 47, 735-735 0
- 429 PtRh alloy catalysts for hydrogen generation developed by direct current/pulse current method. 1 1
- 428 2 D -Materials-Based Heterostructures for EC Energy Conversion. **2022**, 53-128
- 427 Core/shell NiMoSe@NiMoO<sub>4</sub> micro-cuboids anchored on Nickel foam as self-supported electrode towards efficient and stable hydrogen generation. **2021**, 904, 115829 0
- 426 Hydrogen and medical oxygen by renewable energy based electrolysis: A green and economically viable route. **2022**, 306, 117993 2

425	Progress and challenges on the thermal management of electrochemical energy conversion and storage technologies: Fuel cells, electrolysers, and supercapacitors. <i>Progress in Energy and Combustion Science</i> , <b>2022</b> , 88, 100966	33.6	10
424	A serial system of multi-stage reverse electrodialysis stacks for hydrogen production. <b>2022</b> , 251, 114932		2
423	Seawater electrolysis. <b>2022</b> , 305-326		
422	Sensing Materials: Carbon Materials. <b>2021</b> ,		
421	Efficiency of Aluminium and Copper Coated Aluminium Electrode in Hydrogen Fuel Generation from Rain Water. <b>2020</b> , 12, 348-356		
420	An overview of water electrolysis technologies for the production of hydrogen. <b>2020</b> , 161-190		0
419	Embodiment of an Efficient Brown Gas Compound Fuel Tank. <b>2020</b> , 43-52		
418	Konventionelle Verfahren zur Wasserstoffherstellung. <b>2020</b> , 17-37		
417	Chapter 11:Supported Vanadium Catalysts: Heterogeneous Molecular Complexes, Electrocatalysis and Biomass Transformation. <b>2020</b> , 241-284		
416	Effect of Electroplating Parameters on Oxygen Evolution Reaction Characteristics of Raney Ni-Zn-Fe Electrode. <b>2020</b> , 31, 23-32		
415	The Synergetic Effect of MoSO <sub>2</sub> /Graphite Nanosheets as Highly Efficient for Electrochemical Water Splitting in Acidic Media. <b>2021</b> , 13, 1574-1583		
414	Nickel-manganese double hydroxide mixed with reduced graphene oxide electrocatalyst for efficient ethylene glycol electrooxidation and hydrogen evolution reaction. <b>2021</b> , 282, 116959		1
413	Rapidly solidified Fe-base alloys as electrode materials for water electrolysis. 103, 1155-1158		
412	Synergetic Effect of Graphene Oxide and Metal Organic Framework Nanocomposites as Electrocatalysts for Hydrogen Evolution Reaction. <b>2021</b> , 23-54		0
411	Electrochemical production of hydrogen in molten salt. <b>2022</b> , 251, 114980		2
410	Silver-doped ZnO embedded reduced graphene oxide hybrid nanostructured composites for superior photocatalytic hydrogen generation, dye degradation, nitrite sensing and antioxidant activities. <b>2021</b> , 109051		6
409	Influence of Potassium-Based Alkaline Electrolyzed Water on Hydration Process and the Properties of Cement-Based Materials with Fly Ash. <b>2021</b> , 14,		0
408	Modeling and Optimization of an Alkaline Water Electrolysis for Hydrogen Production. <b>2021</b> ,		0

407	Bismuth-based materials for rechargeable aqueous batteries and water desalination. <b>2022</b> , 41, 287	2
406	Recent Progress on Transition Metal Based Layered Double Hydroxides Tailored for Oxygen Electrode Reactions. <b>2021</b> , 11, 1394	2
405	Perspective Electrochemical Gasification: Revisiting an Old Reaction in New Perspective and Turning Black Hydrogen to Blue <b>2021</b> , 168, 114516	
404	Efficient utilization of waste heat from molten carbonate fuel cell in parabolic trough power plant for electricity and hydrogen coproduction. <b>2021</b> ,	2
403	The effect of buoyancy driven convection on the growth and dissolution of bubbles on electrodes. <b>2021</b> , 139616	0
402	Potential Feature of Combined AB5-Type Metal Hydride Tank and PEMFC as a Safer System for Hydrogen Fueling in Bangladesh. <b>2021</b> , 9,	
401	The Structural Effect of Electrode Mesh on Hydrogen Evolution Reaction Performance for Alkaline Water Electrolysis. <b>2021</b> , 9, 787787	0
400	Non-precious hydrogen evolution reaction catalysts: Stepping forward to practical polymer electrolyte membrane-based zero-gap water electrolyzers. <b>2021</b> , 433, 133681	1
399	Recent progress in carbon-based materials boosting electrochemical water splitting. <b>2021</b> ,	1
398	Atomic-Scale Observations of the Manganese Porphyrin/Au Catalyst Interface Under the Electrocatalytic Process Revealed with Electrochemical Scanning Tunneling Microscopy. <b>2021</b> , 8, 2100873	2
397	Enhanced the electrochemical performance of mesh nano composite based catalyst for oxygen evolution reaction: Recent development. <b>2021</b> ,	0
396	Recent Developments on Hydrogen Production Technologies: State-of-the-Art Review with a Focus on Green-Electrolysis. <b>2021</b> , 11, 11363	11
395	Dual regulation both intrinsic activity and mass transport for self-supported electrodes using in anion exchange membrane water electrolysis. <b>2021</b> , 431, 133942	5
394	Novel heterostructure CuS/NiS coral-like nanoarrays on Ni foam to enhance hydrogen evolution reaction in alkaline media.. <b>2021</b> , 11, 39493-39502	
393	Sustainable Routes for Renewable Energy Carriers in Modern Energy Systems. <b>2021</b> , 239-265	0
392	Global hydrogen development - A technological and geopolitical overview. <b>2022</b> , 47, 7016-7016	11
391	Short-Lived Interfaces in Energy Materials. <b>2022</b> , 9,	0
390	Nanostructures and Oxygen Evolution Overpotentials of Surface Catalyst Layers Synthesized on Various Austenitic Stainless Steel Electrodes. <b>2022</b> , 13, 116	0

389	Investigation on hydrogen evolution reaction performance of porous electrode prepared by laser powder bed fusion. <b>2022</b> , 185, 771-778	2
388	Amorphous silicon carbide thin films doped with P or B for the photoelectrochemical water splitting devices. <b>2022</b> , 34, 101-106	
387	Study of amine customized exfoliated BN sheets in SPEEK-PES based blend membrane for acid-base cation exchange membrane fuel cells. <b>2022</b> , 10, 107025	1
386	Bioelectrosynthesis systems.. <b>2021</b> , 74, 211-219	1
385	Metal/antiperovskite metal nitride composites Ag/AgNNi <sub>3</sub> as novel efficient electrocatalysts for hydrogen evolution reaction in alkaline media. <b>2022</b> , 112, 222-229	0
384	Green Synthesis of a Ni-Mo-O Composite Catalyst for Superior Hydrogen Production in Acidic and Alkaline Electrolytes.	
383	Photo-catalytic water splitting : TiO <sub>2</sub> GO for water splitting. <b>2021</b> ,	
382	Development of Electrode Nanomaterials for Alkaline Water Electrolysis. <b>2021</b> , 55, 952-961	1
381	Hydrogen strategy as an energy transition and economic transformation avenue for natural gas exporting countries: Qatar as a case study. <b>2022</b> , 47, 4977-5009	2
380	A framework for the design & operation of a large-scale wind-powered hydrogen electrolyzer hub. <b>2022</b> , 47, 8671-8686	0
379	Mechanistic Aspects of Cobalt-Oxo Cubane Clusters in Oxidation Chemistry.. <b>2022</b> ,	3
378	Porous metal electrodes enable efficient electrolysis of carbon capture solutions.	9
377	Nickel-Based Selenides with a Fractal Structure as an Excellent Bifunctional Electrocatalyst for Water Splitting.. <b>2022</b> , 12,	5
376	Green heterogeneous catalysis. <b>2022</b> , 193-242	
375	Ultra-small Ru nanoparticles embedded on FeNi(OH) <sub>2</sub> nanosheets for efficient water splitting at a large current density with long-term stability of 680 hours.	4
374	Power management strategy of PV-PEMFC-PEMEC hybrid systems integrated with a vanadium redox flow battery. <b>2022</b> , 155-188	
373	A review of Ni based powder catalyst for urea oxidation in assisting water splitting reaction. <b>2022</b> ,	13
372	Electrocatalytic Conversion of Glycerol to Oxalate on Ni Oxide Nanoparticles-Modified Oxidized Multiwalled Carbon Nanotubes. <b>2022</b> , 12, 982-992	5

371 Power-to-Gas. **2022**, 595-612

370 Development of Ni-Ir Oxide Composites as Oxygen Catalysts for an Anion-Exchange Membrane Water Electrolyzer. **2022**, 2102063 0

369 Mn-doping induced electronic modulation and rich oxygen vacancies on vertically grown NiFe<sub>2</sub>O<sub>4</sub> nanosheet array for synergistically triggering oxygen evolution reaction. **2022**, 1 2

368 Superior hydrogen evolution electrocatalysis enabled by CoP nanowire array on graphite felt. **2022**, 47, 3580-3586 22

367 Interfacial interaction induced OER activity of MOF derived superhydrophilic CoO-NiO hybrid nanostructures.. **2022**, 1

366 ZnO-based heterostructures as photocatalysts for hydrogen generation and depollution: a review. **2022**, 20, 1047 6

365 Enhancement of hydrogen production using dynamic magnetic field through water electrolysis. 0

364 Impact of Power Converter Current Ripple on the Degradation of PEM Electrolyzer Performances.. **2022**, 12, 1

363 Green ammonia synthesis using CeO/RuO nanolayers on vertical graphene catalyst electrochemical route in alkaline electrolyte.. **2022**, 0

362 Engineering Metallic Heterostructure Based on Ni N and 2M-MoS for Alkaline Water Electrolysis with Industry-Compatible Current Density and Stability.. **2021**, e2108505 16

361 Electrochemical Water Splitting: H<sub>2</sub> Evolution Reaction. **2022**, 59-89 0

360 Laser-Induced Generation of Hydrogen in Water by Using Graphene Target.. **2022**, 27, 0

359 Membraneless electrolyzers for the production of low-cost, high-purity green hydrogen: A techno-economic analysis. **2022**, 254, 115156 1

358 One-pot green method for fabrication of MoS<sub>2</sub> decorated graphite rod and their application in H<sub>2</sub> evolution. **2022**, 313, 131784 1

357 Effect of electrode material on the hydrogen production using a low-cost home-made alkaline electrolyzer. **2022**, 198, 110878 0

356 Thermodynamic and electrochemical assessment of an alkaline electrolyzer (AE) at different operating parameters. **2022**, 10, 107225 0

355 Crystalline-amorphous interface of mesoporous Ni<sub>2</sub>P@FePO<sub>x</sub>H<sub>y</sub> for oxygen evolution at high current density in alkaline-anion-exchange-membrane water-electrolyzer. **2022**, 306, 121127 11

354 Superaerophobic/Superhydrophilic Surfaces as Advanced Electrocatalyst for Hydrogen Evolution Reaction: A Comprehensive Review. 6

353	Modifying the 316L stainless steel surface by an electrodeposition technique: towards high-performance electrodes for alkaline water electrolysis.	0
352	Electrochemical Growth and Formation Mechanism of Cu <sub>2</sub> Se/CoSe <sub>2</sub> -Based Bifunctional Electrocatalyst: A Strategy for the Development of Efficient Material toward Water Electrolysis.	3
351	An Overview of Hydrogen Production: Current Status, Potential, and Challenges. <b>2022</b> , 316, 123317	10
350	Modulating metal-organic frameworks for catalyzing acidic oxygen evolution for proton exchange membrane water electrolysis. <b>2021</b> , 1, 460-481	12
349	Phase-Controlled NiO Nanoparticles on Reduced Graphene Oxide as Electrocatalysts for Overall Water Splitting.. <b>2021</b> , 11,	1
348	A facile and simple microwave-assisted synthesis method for mesoporous ultrathin iron sulfide nanosheets as an efficient bifunctional electrocatalyst for overall water splitting.. <b>2022</b> ,	2
347	Enhanced Ammonia-Rich Solution Production and Electrode Separation Using Magnetic Nickel-Loaded Carbon Black in Flow-Electrode Capacitive Deionization (Fcdi).	
346	Hydrogen Fuel: Clean Energy Production Technologies. <b>2022</b> , 133-154	0
345	Research on Hydrogen Power Station Accessing to Traction Power Supply System. <b>2022</b> , 711-722	
344	Power-to-X for Renewable-Based Hybrid Energy Systems. <b>2022</b> , 23-40	
343	?????????????????. <b>2022</b> ,	
342	Chemical Vapor Deposition for Advanced Polymer Electrolyte Fuel Cell Membranes.	1
341	Polymer/fullerene nanocomposite coatings front line potential. <b>2022</b> , 5, 29-40	1
340	Effect of catalyst layer designs for high-performance and durable anion-exchange membrane water electrolysis. <b>2022</b> ,	1
339	Nickel-Based Electrocatalysts for Water Electrolysis. <b>2022</b> , 15, 1609	2
338	Hydrogen Evolution Linked to Selective Oxidation of Glycerol over CoMoO <sub>4</sub> ∅ Theoretically Predicted Catalyst. 2103750	3
337	Mathematical modelling of active chlorine based UV/Electro-Fenton-like process: Elucidation of reactor engineering implications to guide scaling-up. <b>2022</b> ,	0
336	A sandwich structure of cobalt pyrophosphate/nickel phosphite@C: one step synthesis and its good electrocatalytic performance.	

335	Improved 3D porous structures of Ni electrodes prepared by high-pressure cold spray and post annealing for water splitting. <b>2022</b> , 47, 13226-13239	0
334	Exploring the interface of porous cathode/bipolar membrane for mitigation of inorganic precipitates in direct seawater electrolysis.. <b>2022</b> ,	0
333	Green hydrogen: A promising way to the carbon-free society. <b>2022</b> , 43, 2-13	6
332	Electrocatalysis Goes Nuts. 4296-4301	9
331	Facile synthesis of rare earth metal dual-doped Pr <sub>2</sub> O <sub>3</sub> nanostructures: Enhanced electrochemical water-splitting and antimicrobial properties. <b>2022</b> ,	1
330	Tuning the Polarity of a Fibrous Poly(vinylidene fluoride--hexafluoropropylene)-Based Support for Efficient Water Electrolysis.. <b>2022</b> , 7, 10077-10086	0
329	Designing and Tuning the Electronic Structure of Nickel/Vanadium Layered Double Hydroxides for Highly Efficient Oxygen Evolution Electrocatalysis. <b>2022</b> , 12, 3821-3831	7
328	High-Value Chemicals from Electrocatalytic Depolymerization of Lignin: Challenges and Opportunities.. <b>2022</b> , 23,	2
327	Zirconia Toughened Alumina-Based Separator Membrane for Advanced Alkaline Water Electrolyzer.. <b>2022</b> , 14,	1
326	Microscopic high-speed video observation of oxygen bubble generation behavior and effects of anode electrode shape on OER performance in alkaline water electrolysis. <b>2022</b> , 47, 11116-11127	3
325	Integrating Amorphous Molybdenum Sulfide Nanosheets with a CoS@NiS Array as an Efficient Electrocatalyst for Overall Water Splitting.. <b>2022</b> ,	1
324	KOH vs. Deionized Water Operation in Anion Exchange Membrane Electrolyzers.	3
323	Oxygen Evolution Reaction in Alkaline Environment: Material Challenges and Solutions. 2110036	17
322	Enhanced inhibition on hydrogen permeation during electrodeposition process by rare earth (RE = Ce) salt additive. <b>2022</b> , 47, 13803-13814	0
321	Highly Efficient Nanoflower-like Bifunctional Electrocatalyst Co-W-B-P/CF for Overall Water Splitting.	1
320	Interfacial engineering induced highly efficient CoNiP@NiFe layered double hydroxides bifunctional electrocatalyst for water splitting. <b>2022</b> , 25, 100975	2
319	Carbon supported bifunctional Rh/Ni(OH) <sub>2</sub> /C nanocomposite catalysts with high electrocatalytic efficiency for alkaline hydrogen evolution reaction. <b>2022</b> , 47, 13674-13682	0
318	Role of cobalt precursors in the synthesis of Co <sub>3</sub> O <sub>4</sub> hierarchical nanostructures toward the development of cobalt-based functional electrocatalysts for bifunctional water splitting in alkaline and acidic media.	

317	From Fundamentals and Theories to Heterostructured Electrocatalyst Design: An In-depth Understanding of Alkaline Hydrogen Evolution Reaction. <b>2022</b> , 107231	7
316	Review and analysis of the hydrogen production technologies from a safety perspective. <b>2022</b> , 47, 13990-14007	
315	Electrodissolution-coupled hafnium alkoxide synthesis with high environmental and economic benefits.. <b>2022</b> ,	2
314	Spatio-temporal trends in the propagation and capacity of low-carbon hydrogen projects. <b>2022</b> ,	3
313	Transition metal dichalcogenides as catalysts for the hydrogen evolution reaction: The emblematic case of Hf <sub>2</sub> Se <sub>2</sub> as catalyst for electrolyzers.	1
312	Incorporation of manganese carbonyl sulfide ((Mn <sub>2</sub> S <sub>2</sub> (CO) <sub>7</sub> ) and mixed metal oxides-decorated reduced graphene oxide (MnFeCoO <sub>4</sub> /rGO) as a selective anode toward efficient OER from seawater splitting under neutral pH conditions. <b>2022</b> ,	0
311	Co-Ni Layered Double Hydroxide for the Electrocatalytic Oxidation of Organic Molecules: An Approach to Lowering the Overall Cell Voltage for the Water Splitting Process.. <b>2022</b> ,	1
310	Modeling of the Simultaneous Hydrogen Evolution and Cobalt Electrodeposition.. <b>2022</b> ,	
309	A wettability pattern-mediated trapped bubble removal from a horizontal liquid-liquid interface. <b>2022</b> , 34, 042109	0
308	High throughput preparation of NiMo alloy thin films as efficient bifunctional electrocatalysts for water splitting. <b>2022</b> ,	3
307	Comparative study of alkaline water electrolysis, proton exchange membrane water electrolysis and solid oxide electrolysis through multiphysics modeling. <b>2022</b> , 312, 118788	5
306	A multiphysics model of the compactly-assembled industrial alkaline water electrolysis cell. <b>2022</b> , 314, 118987	0
305	Performance and stability of a critical raw materials-free anion exchange membrane electrolysis cell. <b>2022</b> , 413, 140078	3
304	Techno-environmental assessment of small-scale Haber-Bosch and plasma-assisted ammonia supply chains.. <b>2022</b> , 826, 154162	2
303	Investigation of the influence of the void fraction on the energy consumption of a vertical electrolyser under natural convection. <b>2022</b> , 10, 107577	0
302	Development of a universal method for high yield of furfural and hydrogen from raw lignocellulosic biomass. <b>2022</b> , 18, 101022	0
301	Transition metal oxy/hydroxides functionalized flexible halloysite nanotubes for hydrogen evolution reaction.. <b>2022</b> , 618, 518-528	2
300	A Brief Review on Hydrogen production to Utilization Techniques. <b>2021</b> ,	2

299	Sequential Synthesis Methodology Yielding Well-Defined Porous SrTiO/NiFeO Nanocomposite.. <b>2021</b> , 12,	2
298	Solar-Driven Simultaneous Electrochemical CO <sub>2</sub> Reduction and Water Oxidation Using Perovskite Solar Cells. <b>2022</b> , 15, 270	2
297	Machine-Learning Assisted Exploration: Toward the Next-Generation Catalyst for Hydrogen Evolution Reaction. <b>2021</b> , 168, 126523	0
296	Rezonans d <sub>001</sub> hidrojen üretim sisteminin geliştirilmesi.	
295	Study of Plasma-Water Interactions: Effect of Plasma Electrons and Production of Hydrogen Peroxide. <b>2021</b> , 95, 2691-2698	
294	Cobalt Carbonate-Coated Nitrogen-Doped Carbon Nanotubes with a Sea-Cucumber Morphology for Electrocatalytic Water Splitting. <b>2021</b> ,	0
293	Vacancy-mediated transition metals as efficient electrocatalysts for water splitting.. <b>2022</b> , 14, 7181-7188	0
292	Nickel-based Anodes in Anion Exchange Membrane Water Electrolysis: A Review.	1
291	Aerosol-based synthesis of multi-metallic electrocatalysts for oxygen evolution and glycerol oxidation.	1
290	Indirect electrodeposition of a NiMo@Ni(OH) <sub>2</sub> MoO composite catalyst for superior hydrogen production in acidic and alkaline electrolytes. <b>2022</b> ,	0
289	Electro-Oxidation of Metal Oxide-Fabricated Graphitic Carbon Nitride for Hydrogen Production via Water Splitting. <b>2022</b> , 12, 548	1
288	In situ formation of a nickel-iron-sulfur bifunctional catalyst within a porous polythiophene coating for water electrolysis. <b>2022</b> ,	
287	Electrodeposition: An efficient method to fabricate self-supported electrodes for electrochemical energy conversion systems. 20210077	2
286	Ni(OH) <sub>2</sub> nanoparticles encapsulated in conductive nanowire array for high-performance alkaline seawater oxidation. 1	6
285	Layered double hydroxide composite membrane for advanced alkaline water electrolysis.	2
284	Hydrogen Production and Its Applications to Mobility.. <b>2022</b> ,	0
283	Mathematical modelling of coupled and decoupled water electrolysis systems based on existing theoretical and experimental studies. <b>2022</b> ,	0
282	Effects of operation and shutdown parameters and electrode materials on the reverse current phenomenon in alkaline water analyzers. <b>2022</b> , 535, 231454	2

281	Incorporating Au nanoclusters on MoS nanosheet edges for promoting the hydrogen evolution reaction at the interface.. <b>2022,</b>	0
280	Concentrating solar technology for generation of high temperature industrial process heat in South Africa: A pre-feasibility study in sustainable hydrogen production. <b>2022,</b>	
279	Highly Active NiFe Based Oxide Oxygen Evolution Reaction Electrocatalysts for Alkaline Anion Exchange Membrane Electrolyser. <b>2022, 12, 476</b>	
278	Silver Nanocluster/MoS <sub>2</sub> Heterostructures for Hydrogen Evolution.	1
277	Transforming road freight transportation from fossils to hydrogen: Opportunities and challenges. 1-21	1
276	Energy Transition in France. <b>2022, 14, 5818</b>	1
275	Photovoltaic/photo-electrocatalysis integration for green hydrogen: A review. <b>2022, 261, 115648</b>	5
274	Analysis of the effect of characteristic parameters and operating conditions on exergy efficiency of alkaline water electrolyzer. <b>2022, 537, 231532</b>	1
273	Boosting the oxygen evolution reaction performance of wrinkled Mn(OH) <sub>2</sub> via conductive activation with a carbon binder. <b>2022, 71, 580-587</b>	1
272	A high temperature and pressure framework for supercritical water electrolysis. <b>2022,</b>	
271	Water electrolysis: from textbook knowledge to the latest scientific strategies and industrial developments.. <b>2022,</b>	21
270	SNG based energy storage systems with subsurface CO <sub>2</sub> storage.	
269	Hierarchical monolithic carbon with high transfer performance for hydrogen evolution reaction. <b>2022,</b>	0
268	Optimal design for a hybrid microgrid-hydrogen storage facility in Saudi Arabia. <b>2022, 12,</b>	1
267	Impact of different metallic forms of nickel on hydrogen evolution reaction. <b>2022, 218, 114829</b>	
266	Production of biohydrogen. <b>2022, 283-337</b>	0
265	Importance of Hydroxide Ion Conductivity Measurement for Alkaline Water Electrolysis Membranes. <b>2022, 12, 556</b>	
264	Synergistically boosting the elementary reactions over multiheterogeneous ordered macroporous Mo <sub>2</sub> C/NC-Ru for highly efficient alkaline hydrogen evolution.	3

- 263 Frequency Analysis of Water Electrolysis Current Fluctuations in a PEM Flow Cell: Insights into Bubble Nucleation and Detachment. **2022**, 169, 054531 0
- 262 N, P Self-Doped Porous Carbon Material Derived from Lotus Pollen for Highly Efficient Ethanol/Water Mixtures Photocatalytic Hydrogen Production. **2022**, 12, 1744 0
- 261 Recent advances in cobalt phosphide-based materials for electrocatalytic water splitting: From catalytic mechanism and synthesis method to optimization design. **2022**, 0
- 260 Direct electrolysis of bunsen reaction product for hydrogen production: The continuous-flow operation. **2022**, 0
- 259 Dynamic self-optimization of hierarchical NiAl architecture catalysing oxygen evolution reaction in alkaline water electrolysis. **2022**, 28, 101526
- 258 Applications of Atomically Precise Metal Nanoclusters. **2021**, 79-126
- 257 Electrochemical formal [3 + 2] cycloaddition of azobenzenes with hexahydro-1,3,5-triazines. 0
- 256 Self-activatable carbon nanotube@ruthenium-catechol coordination complex for hydrogen evolution reaction.
- 255 Recent Progress on Titanium Sesquioxide: Fabrication, Properties, and Applications. 2203491 3
- 254 Strategic comparison of membrane-assisted and membrane-less water electrolyzers and their potential application in direct seawater splitting (DSS). **2022**, 0
- 253 Surface Design Strategy of Catalysts for Water Electrolysis. 2202336 9
- 252 Technologies for the Clean and Renewable Energy Production for the Sustainable Environment. **2022**, 141-178
- 251 Fabrication of efficient electrocatalytic system with ruthenium cobalt sulfide over a carbon cloth. **2022**, 0
- 250 A novel approach for the fabrication of Cobalt ferrite and Nickel ferrite nanoparticles magnetic and electrocatalytic studies.
- 249 Reactive Sputtered Ir<sub>1-y</sub>Ni<sub>y</sub>O<sub>x</sub> Electrocatalysts For The Oxygen Evolution Reaction in Alkaline Media.
- 248 A critical review of the hydrogen production from biomass-based feedstocks: Challenge, solution, and future prospect. **2022**, 164, 384-407 4
- 247 Battery energy storage system for enhancing the electrolyzer capacity factor in small-scale WindH<sub>2</sub> system with a smoothing control strategy: Constrained multi-objective Pareto optimization and case study in Algeria. **2022**, 52, 105017
- 246 Periodic porous 3D boron-doped diamond electrode for enhanced perfluorooctanoic acid degradation. **2022**, 297, 121556 0

245	Recent Advancement in Preparation Strategy of Efficient Graphene-Cds-Based Photocatalysts for H <sub>2</sub> Production by Water Splitting. <b>2022</b> , 203-224	
244	Multifunctional materials for photo-electrochemical water splitting.	4
243	Design of anode functional layers for protonic solid oxide electrolysis cells.	0
242	A carbonization/interfacial assembly-driven electroplating approach for water-splitting textile electrodes with remarkably low overpotentials and high operational stability.	0
241	Perfect Matching Factor between a Customized Double-Junction GaAs Photovoltaic Device and an Electrolyzer for Efficient Solar Water Splitting.	1
240	The catalytic effect of trimetallic alloy modified C-felt electrodes on hydrogen evolution reaction. <b>2022</b> ,	
239	Self-supported iron-doped nickel sulfide as efficient catalyst for electrochemical urea and hydrazine oxidation reactions. <b>2022</b> ,	1
238	FeOOH nanorod as a highly active and durable self-repairing anode catalyst for alkaline water electrolysis powered by renewable energy.	0
237	Mechanisms of the Oxygen Evolution Reaction on NiFe <sub>2</sub> O <sub>4</sub> and CoFe <sub>2</sub> O <sub>4</sub> Inverse-Spinel Oxides. 9058-9073	3
236	Role of Tungsten Carbide (WC) and its Hybrids in Electrochemical Water Splitting Application- A Comprehensive Review. <b>2022</b> , 100404	2
235	General Synthesis of Tube-like Nanostructured Perovskite Oxides with Tunable Transition Metal-Oxygen Covalency for Efficient Water Electrooxidation in Neutral Media.	1
234	Composition-Dependent Morphology, Structure, and Catalytical Performance of Nickel-Iron Layered Double Hydroxide as Highly-Efficient and Stable Anode Catalyst in Anion Exchange Membrane Water Electrolysis. 2203520	2
233	Anode Catalysts in Anion-Exchange-Membrane Electrolysis Without Supporting Electrolyte: Conductivity, Dynamics, and Ionomer Degradation. 2203033	6
232	Transfer Hydrogenation of CO <sub>2</sub> and CO <sub>2</sub> Derivatives using Alcohols as Hydride Sources: Boosting an H <sub>2</sub> -Free Alternative Strategy. 8886-8903	2
231	Unfolding essence of nanoscience for improved water splitting hydrogen generation in the light of newly emergent nanocatalysts. <b>2022</b> ,	1
230	Hydrogen production from water electrolysis driven by the membrane voltage of a closed-loop reverse electrodialysis system integrating air-gap diffusion distillation technology. <b>2022</b> , 268, 115974	0
229	Phosphorus-doping promotes the electrochemical etching of metals to nanoporous electrodes for efficient and durable overall water splitting. <b>2022</b> , 542, 231774	0
228	Carbide-directed enhancement of electrochemical hydrogen evolution reaction on tungsten carbide-oxide heterostructure. <b>2022</b> , 450, 137915	0

- 227 Regulation of Bubble Behavior on a TiO<sub>2</sub> Photoelectrode Surface during Photoelectrocatalytic Water Splitting. ○
- 226 Regulating the Metal Concentration for Selective Tuning of VS<sub>2</sub>/MoS<sub>2</sub> Heterostructures toward Hydrogen Evolution Reaction in Acidic and Alkaline Media. ○
- 225 Electrochemically prepared Fe: NiO thin film catalysis for oxygen evolution reaction.
- 224 Research Progress on Magnetic Catalysts and Its Application in Hydrogen Production Area. **2022**, 15, 5327
- 223 Alkaline Water Electrolysis Model to Purify GMP grade NaOH Solutions for Biopharmaceutical Manufacturing Processes. **2022**, 283-288
- 222 [FeFe]-Hydrogenases: Structure, Mechanism, and Metallocluster Biosynthesis. **2022**,
- 221 Enhanced Ammonia-Rich Solution Production and Electrode Separation Using Magnetic Nickel-Loaded Carbon Black in Flow-Electrode Electrochemical Deionization (Feed).
- 220 Electrodeposited Nickel Oxide Thin Film for Electrochemical Water Splitting. 38-42
- 219 Electrochemically Tuned Synergistic Nano-Interface of a Tertiary Ni(OH)<sub>2</sub>/NiO(OH)/Ni x P Heterojunction Material for Enhanced and Durable Alkaline Water Splitting. **2022**, 7, 1
- 218 Suitability of the VOF Approach to Model an Electrogenenerated Bubble with Marangoni Micro-Convection Flow. **2022**, 7, 262
- 217 Performance analysis and economic competitiveness of 3 different PV technologies for hydrogen production under the impact of arid climatic conditions of Morocco. **2022**, ○
- 216 Unveiling the Coercivity-Induced Electrocatalytic Oxygen Evolution Activity of Single-Domain CoFe<sub>2</sub>O<sub>4</sub> Nanocrystals under a Magnetic Field. **2022**, 13, 7476-7482 2
- 215 Sun, heat and electricity. A comprehensive study of non-pollutant alternatives to produce green hydrogen. 1
- 214 3D Nanostructured Nickel Hydroxide as an Efficient Electrocatalyst for Oxygen Evolution Reaction. ○
- 213 Effects of Artificial River Water on PEM Water Electrolysis Performance. **2022**, 12, 934
- 212 Bioinformatics and Metabolic flux analysis highlight a new mechanism involved in lactate oxidation in *Clostridium tyrobutyricum*.
- 211 Enhanced Hydrogen Production during Electro-Oxidation of Ethanol using Plasmonic Gold Nanoparticles. 2200134
- 210 Comparative study on combustion and emission of SI engine blended with HHO by different injection modes of gasoline. **2022**, ○

209	Recent advances in non-precious Ni-based promising catalysts for water splitting application.	1
208	ML-guided design and screening of chalcogenide catalysts for hydrogen evolution reaction. <b>2022</b> ,	0
207	Tailor-designed bimetallic Co/Ni macroporous electrocatalyst for efficient glycerol oxidation and water electrolysis. <b>2022</b> ,	3
206	Recent advances in electrocatalysts for seawater splitting in hydrogen evolution reaction. <b>2022</b> ,	0
205	Highly Conductive and Mechanically Robust NiFe Alloy Aerogels: An Exceptionally Active and Durable Water Oxidation Catalyst. 2203663	0
204	A dual bubble layer model for reactant transfer resistance in alkaline water electrolysis. <b>2022</b> , 141053	0
203	Performance assessment of a low-cost, scalable 0.5 kW alkaline zero-gap electrolyser. <b>2022</b> ,	0
202	Power-to-X: A review and perspective. <b>2022</b> , 165, 107948	3
201	Anion Exchange Membrane Water Electrolyzer: Electrode Design, Lab-Scaled Testing System and Performance Evaluation. <b>2022</b> , 4, 100087	5
200	A Comprehensive Review on Recent Advancements in Thermochemical Processes for Clean Hydrogen Production to Decarbonize the Energy Sector. <b>2022</b> , 14, 11206	7
199	Key Criteria for Next-Generation Dimensionally Stable Electrodes towards Large-Scale Green Hydrogen Production by Water Electrolysis. <b>2022</b> , 101136	0
198	Grid-Oriented multiphysics model of Power-to-Hydrogen electrolyzers. <b>2022</b> , 270, 116264	0
197	Current trends in hydrogen production, storage and applications in India: A review. <b>2022</b> , 53, 102677	1
196	Removal of bubbles from electrodes in a planar cyclonic electrolyzer. <b>2022</b> , 181, 109133	0
195	N-doped macroporous carbon loading Mo <sub>2</sub> C as cathode electrocatalyst of hybrid neutral-alkaline microbial electrolysis cells for H <sub>2</sub> generation. <b>2022</b> , 431, 141142	0
194	Effective excitons separation in starfish Bi <sub>2</sub> S <sub>3</sub> /TiO <sub>2</sub> nanostructures for enhanced hydrogen production. <b>2022</b> , 26, 101096	1
193	Application of phytoremediated biomass for the production of hydrogen. <b>2022</b> , 339-354	0
192	Fast Charge Transfer between Iodide Ions and Delocalized Electron System on the Graphite Surface for Boosting Hydrogen Energy Production.	0

- 191 A highly efficient and stable platinum film deposited via a mixed metal-imidazole casting method as a benchmark cathode for electrocatalytic hydrogen evolution. **2022**, 6, 4265-4274 0
- 190 Controlled Synthesis of Molybdenum Based Catalyst and Its Performance in Electrolysis of Water. **2022**, 12, 240-253 0
- 189 Mononuclear nickel(ii) complexes as electrocatalysts in hydrogen evolution reactions: effects of alkyl side chain lengths. 0
- 188 Investigation of Li-rich manganese oxide spinel structures for electrochemical water oxidation catalysis. **2022**, 51, 12558-12568 0
- 187 In-Situ Desalination-Coupled Electrolysis with Concurrent One-Step-Synthesis of Value-Added Chemicals. 0
- 186 Adjusting oxygen vacancies in perovskite LaCoO<sub>3</sub> by electrochemical activation to enhance the hydrogen evolution reaction activity in alkaline condition. **2022**, 0
- 185 Heterointerface engineering of Ru/RuS<sub>2</sub> on N/S-doped hollow mesoporous carbon for promoting alkaline hydrogen evolution. **2022**, 107788 0
- 184 Status and perspectives of key materials for PEM electrolyzer. **2022**, 7
- 183 Bioinformatics and Metabolic flux analysis highlight a new mechanism involved in lactate oxidation in *Clostridium tyrobutyricum*. 0
- 182 Combined nano/micro-structure of Ni<sub>12</sub>P<sub>5</sub>-Ni<sub>2</sub>P nanorod array for effective wide pH range HER and overall alkaline water-splitting. **2022**, 116862 0
- 181 Dimensionally stable anodes for the oxygen evolution reaction: Ruthenium dioxide on a nickel metal substrate. **2022**, 47, 33374-33381 0
- 180 Carbon supported NiRu nanoparticles as effective hydrogen evolution catalysts for anion exchange membrane water electrolyzers. 0
- 179 A review on solar energy-based indirect water-splitting methods for hydrogen generation. **2022**, 4
- 178 Thermo-Economic Analysis of Integrated Hydrogen, Methanol and Dimethyl Ether Production Using Water Electrolyzed Hydrogen. **2022**, 11, 85 0
- 177 Ionic Conduction of Ceramic/Molten Salt Composite Electrolyte in Fuel Cell with Lithium Compound as Electrode. **2022**, 169, 094503 0
- 176 Modeling the Photostability of Solar Water-Splitting Devices and Stabilization Strategies. **2022**, 14, 43095-43108
- 175 Optimization of Proton Exchange Membrane Electrolyzer Cell Design Using Machine Learning. **2022**, 15, 6657 1
- 174 Comparison of the Activity of 3D Binary or Ternary Cobalt Coatings for Hydrogen and Oxygen Evolution Reactions. **2022**, 8, 129 1

173	Evaluation of steam supply performance: Steamer vs. bubbler. 10,	0
172	Solar Hydrogen Generation using Abundant Materials via Membrane-less Electrochemical Water Splitting.	0
171	Hydrogen Production through Alkaline Electrolyzers: A Techno-Economic and Enviro-Economic Analysis.	1
170	Recent Developments in Conductive Polymer-Based Electro-/Photoelectrocatalytic Materials for Effective Hydrogen/Oxygen Evolution Reactions: A Review. <b>2022</b> , 9,	1
169	Mass Transfer Mechanism During Bubble Evolution on the Surface of Photoelectrode. <b>2022</b> , 141293	0
168	Effect of the interfacial electronic coupling of nickel-iron sulfide nanosheets with layer Ti <sub>3</sub> C <sub>2</sub> MXenes as efficient bifunctional electrocatalysts for anion-exchange membrane water electrolysis. <b>2022</b> , 122039	1
167	ORP should not be used to estimate or compare concentrations of aqueous H <sub>2</sub> : An in silico analysis and narrative synopsis. 2,	2
166	Enhanced ammonia-rich solution production and electrode separation using magnetic nickel-loaded carbon black in flow-electrode electrochemical deionization (FEED). <b>2022</b> , 544, 116152	0
165	Identifying the active sites in C-N codoped TiO <sub>2</sub> electrode for electrocatalytic water oxidation to produce H <sub>2</sub> O <sub>2</sub> . <b>2022</b> , 29, 3016-3029	1
164	The Effect of NaOH and LaCoO <sub>3</sub> Perovskite on HHO Gas Production Rate. <b>2022</b> , 2344, 012003	0
163	Corrosion-resistant and high-entropic non-noble-metal electrodes for oxygen evolution in acidic media. 2207466	1
162	Efficacy of Hydrogen Purification and Cosmetic Acids in the Treatment of Acne Vulgaris: A Preliminary Report. <b>2022</b> , 11, 6269	5
161	Electrochemical Quantification of H <sub>2</sub> O <sub>2</sub> Released by Airway Cells Growing in Different Culture Media. <b>2022</b> , 13, 1762	0
160	Amorphous Iron-Doped Nickel Selenide Film on Nickel Foam via One-Step Electrodeposition Method for Overall Water Splitting.	0
159	Advances in nonprecious metal catalysts for efficient water oxidation in alkaline media.	0
158	CdTiO <sub>3</sub> -NPs incorporated TiO <sub>2</sub> nanostructure photocatalyst for scavenger-free water splitting under visible radiation. <b>2022</b> , 17, e0276097	0
157	Application of thermal spray coatings in electrolyzers for hydrogen production: advances, challenges, and opportunities.	2
156	Ni-P-based Alloy Coatings Prepared by Direct and Pulsed Electrodeposition for Hydrogen Evolution Reaction in Alkaline Media.	0

- 155 Hydrogen Bubble-Assisted One-Step Electrodeposition of Cu, Ni, and P toward Electrocatalytic Water Oxidation. **2022**, 5, 12602-12613 ○
- 154 Test of conductor and semiconductor electrocatalysts in high voltage alkaline electrolyzer as production media for green hydrogen. **2022**, ○
- 153 Insight into the mechanism of hydrogen permeation inhibition by cerium during electroplating: Enhanced kinetics of hydrogen desorption. **2022**, ○
- 152 Constructing 1T-2H TaS<sub>2</sub> nanosheets with architecture and defect engineering for enhance hydrogen evolution reaction. **2022**, 167877 ○
- 151 Nitrogen-doped carbon decorated-Ni<sub>3</sub>Fe@Fe<sub>3</sub>O<sub>4</sub> electrocatalyst with enhanced oxygen evolution reaction performance. **2022**, 925, 116887 ○
- 150 A new eco-friendly strategy for chromium determination in stainless steels: Electrolytic dissolution followed by voltammetric detection. **2022**, 183, 108042 ○
- 149 A comprehensive review of alkaline water electrolysis mathematical modeling. **2022**, 327, 120099 1
- 148 Comparative life cycle assessment of conventional combustion engine vehicle, battery electric vehicle and fuel cell electric vehicle in Nepal. **2022**, 379, 134407 ○
- 147 Wind-photovoltaic co-generation prediction and energy scheduling of low-carbon complex regional integrated energy system with hydrogen industry chain based on copula-MILP. **2022**, 328, 120205 ○
- 146 Anion-exchange membrane water electrolyzers and fuel cells. 4
- 145 NiTiO<sub>3</sub> Perovskite Nanoparticles for Highly Durable Hydrogen and Oxygen Evolution in Water Splitting. **2022**, ○
- 144 Multi-Configuration Structure Based on Catalysis Electrodes and composite membrane for Efficient Alkaline Water Splitting. **2022**, 140373 ○
- 143 A review on hydrogen-natural gas engines for sustainable mobility. **2022**, ○
- 142 Mott Schottky CoS<sub>x</sub>-MoO<sub>x</sub>@NF heterojunctions electrode for H<sub>2</sub> production and urea-rich wastewater purification. **2022**, 160170 ○
- 141 Progress of oxygen and hydrogen evolution reactions in parallel with chlorine evolution on manganese single-atom catalysts based on perfect and defective porphyrin, corrole, and phthalocyanine. **2022**, ○
- 140 Numerical simulation on flow and reaction characteristics for catalytic region in helium-heated steam reformer coupled with HTR-10. **2022**, 154, 104435 ○
- 139 Aerogels-Inspired based Photo and Electrocatalyst for Water Splitting to Produce Hydrogen. **2022**, 29, 101670 ○
- 138 Metal/semiconductor contact induced Mott-Schottky junction for enhancing the electrocatalytic activity of water-splitting catalysts. ○

137	Electrocatalytic Properties of Electroless Ni <sub>2</sub> P Coatings Towards Hydrogen Evolution Reaction in Alkaline Solution: Ni <sub>2</sub> P Coatings Deposited on Steel Substrate at Different Concentrations of Sodium Hypophosphite.	0
136	Experimental investigation for novel electrode materials of coal-assisted electrochemical in-situ hydrogen generation: Parametric studies using single-chamber cell. <b>2022</b> ,	0
135	Biomimicry-inspired Fish Scale-like Ni <sub>3</sub> N/FeNi <sub>3</sub> N/NF Superhydrophilic/Superaerophobic Nanoarrays Displaying High Electrocatalytic Performance.	0
134	Electro-(Photo)catalysis for Concurrent Evolution of Hydrogen and High Value-Added Chemicals. 1,	0
133	CO <sub>2</sub> -to-Fuel Business and Institutional Aspects of Implementation Dynamics. <b>2022</b> , 26, 1182-1195	0
132	One-step Hydrothermal Preparation of Bilayer Films of NiCo LDH/Pt Loaded on Nickel Foam Surface for HER Catalyst Activity.	0
131	High-performing catalysts for energy-efficient commercial alkaline water electrolysis. <b>2022</b> , 7, 31-60	2
130	Recent progress on design and applications of transition metal chalcogenide-associated electrocatalysts for the overall water splitting. <b>2023</b> , 44, 7-49	0
129	Towards an accelerated decarbonization of the chemical industry by electrolysis.	0
128	Vacancy Fused Multiple Layers of Copper Sulfoselenide Superstructures: A Propitious HER Electrocatalyst in Acid.	0
127	Potential of solar thermochemical water-splitting cycles: A review. <b>2023</b> , 249, 353-366	0
126	Ni/Co/Co <sub>3</sub> O <sub>4</sub> @C Nanorods Derived from MOF@MOF Hybrid for Efficient Overall Water Splitting.	0
125	Topologic transition-induced abundant undercoordinated Fe active sites in NiFeOOH for superior oxygen evolution. <b>2023</b> , 106, 108044	0
124	Recent developments of membranes and electrocatalysts for the hydrogen production by anion exchange membrane water electrolyzers: A review. <b>2023</b> , 16, 104451	1
123	Electrodeposition of Ni - Fe on graphite rod as an efficient and binder-free electrocatalyst for oxygen and hydrogen evolution reactions. <b>2023</b> , 937, 168400	1
122	Geochemical modelling of hydrogen wettability on Quartz: Implications for underground hydrogen storage in sandstone reservoirs. <b>2023</b> , 371, 121076	0
121	Energetic evaluation of phenol wastewater treatment by reverse electro dialysis reactor using different anodes. <b>2023</b> , 329, 117089	0
120	Complementary effects of functionalization, vacancy defects and strain engineering in activating the basal plane of monolayer FePS <sub>3</sub> for HER. <b>2022</b> , 6, 5621-5630	1

119	Hydrogen fuel cell design and plant-based electrolyte analysis. <b>2022,</b>	0
118	Electrolyzed Reduced Water: Review I. Molecular Hydrogen Is the Exclusive Agent Responsible for the Therapeutic Effects. <b>2022, 23, 14750</b>	2
117	Risk-averse based optimal operational strategy of grid-connected photovoltaic/wind/battery/diesel hybrid energy system in the electricity/hydrogen markets. <b>2022,</b>	0
116	Influence of renewable energy power fluctuations on water electrolysis for green hydrogen production. <b>2022,</b>	2
115	$\text{Ni(OH)}_2$ mediated redox catalysis for efficient hydrogen generation by reducing accumulation of bubbles in water splitting. <b>2022,</b>	0
114	Distribution Characteristics of Multiphysics around the Bubble on the Surface of Photoelectrode. <b>2022, 169, 126504</b>	0
113	Design of $\text{XS}_2$ ( $\text{X}=\text{W}$ or $\text{Mo}$ )-Decorated $\text{VS}_2$ Hybrid Nano-Architectures with Abundant Active Edge Sites for High-Rate Asymmetric Supercapacitors and Hydrogen Evolution Reactions. 2205881	0
112	Scalable Photovoltaic-Electrochemical Cells for Hydrogen Production from Water - Recent Advances. <b>2022, 9,</b>	0
111	Experimental study of the effect of HHO gas injection on pollutants produced by a diesel engine at idle speed. <b>2022,</b>	0
110	Operando identification of a side-on nickel superoxide intermediate and the mechanism of oxygen evolution on nickel oxyhydroxide. <b>2022, 100475</b>	0
109	Selectively Enhanced Electrocatalytic Oxygen Evolution within Nanoscopic Channels Fitting a Specific Reaction Intermediate for Seawater Splitting. 2206918	0
108	Enhanced Electrocatalytic Activity of Mo-Doped NiFe Layered Double Hydroxide Nanosheet Arrays for the Hydrogen Evolution Reaction.	0
107	Triazine/thiophene-based microporous organic polymer for electrocatalytic hydrogen evolution reaction.	0
106	Sustainability and challenges in hydrogen production: An advanced bibliometric analysis. <b>2022,</b>	1
105	Electrochemical Oxidation of Primary Alcohols Using a $\text{Co}_2\text{NiO}_4$ Catalyst: Effects of Alcohol Identity and Electrochemical Bias on Product Distribution. 515-529	0
104	Boosting the photocatalytic activity of electrolyte for higher energy efficiency in water electrolysis under influence of an optimal laser. <b>2022, 2411, 012002</b>	0
103	Energy and exergy analysis-based monthly co-optimization of a poly-generation system for power, heating, cooling, and hydrogen production.	0
102	Anion Exchange Membrane Water Electrolysis Based on Nickel Ferrite Catalysts.	0

101	Development of Anion Exchange Membrane Water Electrolysis and the Associated Challenges: A Review.	1
100	Self-Adhesive Ionomers for Alkaline Electrolysis: Optimized Hydrogen Evolution Electrode. <b>2022</b> , 169, 124515	0
99	Reconstruction of a surficial P-rich layer on Ni-P electrocatalysts for efficient hydrogen evolution applicable in acidic and alkaline media. <b>2022</b> , 141138	0
98	High-Rate Alkaline Water Electrolysis at Industrially Relevant Conditions Enabled by Superaerophobic Electrode Assembly. 2206180	2
97	Recent Advances in Transition Metal Tellurides (TMTs) and Phosphides (TMPs) for Hydrogen Evolution Electrocatalysis. <b>2023</b> , 13, 113	0
96	Developments and Challenges of Catalytic Materials for Green Hydrogen Production. 1,	0
95	Pd-based Metallic Glasses as Promising Materials for Hydrogen Energy Applications.	0
94	A review on recent advances and progress in Mo <sub>2</sub> C@C: A suitable and stable electrocatalyst for HER. <b>2023</b> ,	0
93	Activating Ru <sup>2+</sup> /Co Interaction on the $\alpha$ -Co(OH) <sub>2</sub> @Ru Interface for Accelerating the Volmer Step of Alkaline Hydrogen Evolution. 2201362	0
92	Slow OH <sup>-</sup> Dissociation in the First-Order Oxygen Evolution Reaction Kinetics on Polycrystalline FeO(OH). <b>2023</b> , 127, 154-168	0
91	Anodic Etching of Amorphous Ni <sub>81</sub> P <sub>19</sub> Alloy in Hot Concentrated Chloride Solution for Enhanced Hydrogen Evolution in Alkaline Water Electrolysis.	0
90	DFT study on type-II photocatalyst for overall water splitting: g-GaN/C <sub>2</sub> N van der Waals heterostructure. <b>2023</b> ,	0
89	Bioinformatics and metabolic flux analysis highlight a new mechanism involved in lactate oxidation in Clostridium tyrobutyricum.	0
88	Recent progress in Green Ammonia: Production, applications, assessment; barriers, and its role in achieving the sustainable development goals. <b>2023</b> , 277, 116594	0
87	Polymer/fullerene nanomaterials in optoelectronic devices: Photovoltaics, light-emitting diodes, and optical sensors. <b>2023</b> , 153-174	0
86	Advanced polymer/fullerene nanowisker nanocomposites. <b>2023</b> , 87-106	0
85	CoxMoNyOzHw microrods grown on Ni foam for large-current-density alkaline hydrogen evolution with ultralow overpotential. <b>2023</b> , 123870	0
84	A comprehensive review on the electrochemical parameters and recent material development of electrochemical water splitting electrocatalysts. <b>2023</b> , 13, 3843-3876	0

- 83 One-pot synthesis of NiFe nanoarrays under an external magnetic field as an efficient oxygen evolution reaction catalyst. **2023**, 13, 4249-4254 ○
- 82 Fullerene: Fundamentals and state-of-the-art. **2023**, 1-19 ○
- 81 Sustainable energy technologies for the Global South: challenges and solutions toward achieving SDG 7. ○
- 80 Fullerene nano-additives in conjugated polymers: Topographies and technical implications. **2023**, 65-85 ○
- 79 Influence of Element Doping and Surface Oxidation on CoP for Overall Water Splitting: A First-Principles Study. **2023**, 127, 1808-1821 ○
- 78 A State-of-The-Art Review on the Latest trends in Hydrogen production, storage, and transportation techniques. **2023**, 340, 127574 2
- 77 Bubble evolution and transport in PEM water electrolysis: Mechanism, impact, and management. **2023**, 96, 101075 1
- 76 Review of Energy Portfolio Optimization in Energy Markets Considering Flexibility of Power-to-X. **2023**, 15, 4422 ○
- 75 Self-adhesive ionomers for alkaline electrolysis: Optimized oxygen evolution electrode. **2023**, 564, 232811 ○
- 74 Simultaneously mastering operando strain and reconstruction effects via phase-segregation strategy for enhanced oxygen-evolving electrocatalysis. **2023**, ○
- 73 Pulsed electrophoretic deposition of hybrid coatings from aqueous suspensions as surface functionalization and sealing technique of anodized AA2024. Part I: Morphological characterization, analysis of the interfacial interactions, and evaluation of pore impregnation of the anodic layer. **2023**, 178, 107474 ○
- 72 Novel electrodeposited NiFeP/Zn bifunctional catalytic coating for alkaline water splitting. **2023**, 451, 142299 ○
- 71 Hydrogen production from water industries for a circular economy. **2023**, 554, 116448 ○
- 70 Design, construction, and performance of a proton exchange membrane water electrolyzer (PEM-WE). **2023**, 18, 100110 ○
- 69 Low temperature plasma-assisted synthesis and modification of water splitting electrocatalysts. **2023**, 449, 142179 ○
- 68 Green fabrication of nanostructured Ni(OH)<sub>2</sub>/Ni/Carbon felt electrodes with water-containing deep eutectic solvent for enhanced water electrolysis performance. **2023**, 570, 233043 ○
- 67 A short overview of Power-to-Methane: Coupling preparation of feed gas with CO<sub>2</sub> methanation. **2023**, 274, 118692 ○
- 66 tert-Butyl-alcohol-induced breakage of the rigid bubble layer that causes overpotential in the oxygen evolution reaction during alkaline water electrolysis. **2023**, 452, 142283 ○

- 65 Acne vulgaris and the most popular and new cosmetological treatments. ○
- 64 Emerging trends of electrocatalytic technologies for renewable hydrogen energy from seawater: Recent advances, challenges, and techno-feasible assessment. **2023**, 80, 658-688 ○
- 63 Policy design for green hydrogen. **2023**, 178, 113216 ○
- 62 In situ facile fabrication of ultrathin Co(OH)<sub>2</sub>-CoO/graphene oxide nanosheet hybrids with superior oxygen evolution reaction performance. **2023**, 948, 169780 ○
- 61 A review of solar hybrid photovoltaic-thermal (PV-T) collectors and systems. **2023**, 97, 101072 ○
- 60 Industrial femtosecond laser induced construction of micro/nano wettability electrodes with outstanding hydrogen evolution performance. **2023**, 626, 157179 ○
- 59 Research Progress of Solar Hydrogen Production Technology under Double Carbon Target. **2022**, 80, 1629 ○
- 58 In-situ desalination-coupled electrolysis with concurrent one-step-synthesis of value-added chemicals. **2023**, 551, 116431 ○
- 57 Novel Mechanically-Alloyed Cu<sub>100-x</sub>Al<sub>x</sub> Ternary Alloy Electrocatalysts for the Alkaline Hydrogen Evolution Reaction. **2023**, 170, 024508 ○
- 56 The Hydrogen Color Spectrum: Techno-Economic Analysis of the Available Technologies for Hydrogen Production. **2023**, 3, 25-46 ○
- 55 Industrial Femtosecond Laser Induced Construction of Micro/Nano Wettability Electrodes with Outstanding Hydrogen Evolution Performance. ○
- 54 A Review of the Use of Electrolytic Cells for Energy and Environmental Applications. **2023**, 16, 1593 ○
- 53 Dark Fermentation and Principal Routes to Produce Hydrogen. **2023**, 181-223 ○
- 52 Co-electrolysis process for syngas production. **2023**, 237-260 ○
- 51 Geothermal Energy-Driven Hydrogen Production Systems. **2023**, 343-395 ○
- 50 Key Role of NiCoP Arrays as an Electron Reservoir in a Membrane-Free Electrochemical Reactor for Energy-Saving Hydrogen Recovery and Ammonia Decomposition. **2023**, 3, 733-742 ○
- 49 Investigation of ChargeDischarging Behavior of Metal OxideBased Anode Electrocatalysts for Alkaline Water Electrolysis to Suppress Degradation due to Reverse Current. **2023**, 14, 499-510 ○
- 48 Application of Nickel Foam in Electrochemical Systems: A Review. **2023**, 52, 2264-2291 ○

- 47 Mechanistic insight into hydrothermally prepared molybdenum-based electrocatalyst for overall water splitting. **2023**, 445, 142050 ○
- 46 Mathematical modeling for a monopolar-dry cell alkaline electrolyzer, an appraisal on electric and thermodynamics effects for laboratory scale. ○
- 45 Electron induced construction of heterogeneous MoS<sub>2</sub> for highly efficient hydrogen evolution reaction. **2023**, 932, 117267 ○
- 44 Epitome of Fullerene in Conducting Polymeric Nanocomposite Fundamentals and Beyond. **2023**, 62, 618-631 ○
- 43 Influence of CeO<sub>2</sub> nanoparticles in the stability of electrodeposited Ni anodes for alkaline electrolyzers. **2023**, ○
- 42 Optimal design of a coupled photovoltaic-electrolysis-battery system for hydrogen generation. **2023**, 7, 1395-1414 ○
- 41 MoS<sub>2</sub> Nanostructures for Solar Hydrogen Generation via Membraneless Electrochemical Water Splitting. **2023**, 5, 1461-1470 ○
- 40 Electric Potential Distribution Inside the Electrolyte during High Voltage Electrolysis. **2023**, 127, 4387-4394 ○
- 39 Alkaline electrolysis of wastewater and low-quality water. **2023**, 397, 136613 ○
- 38 Proton-donating and chemistry-dependent buffering capability of amino acids for the hydrogen evolution reaction. **2023**, 25, 8005-8012 ○
- 37 Exploring the effect of ion concentrations on the electrode activity and stability for direct alkaline seawater electrolysis. **2023**, ○
- 36 Research on engineered electrocatalysts for efficient water splitting: a comprehensive review. **2023**, 25, 8992-9019 ○
- 35 Distributional Trends in the Generation and End-Use Sector of Low-Carbon Hydrogen Plants. **2023**, 4, 174-189 1
- 34 Recent advances and future prospects on Ni<sub>3</sub>S<sub>2</sub>-Based electrocatalysts for efficient alkaline water electrolysis. **2023**, ○
- 33 A systematic review on green hydrogen for off-grid communities Technologies, advantages, and limitations. **2023**, ○
- 32 A systemic review of hydrogen supply chain in energy transition. ○
- 31 Theoretical study on hydrogen evolution reaction in transition metal borides. ○
- 30 Impact of impurities on water electrolysis: a review. **2023**, 7, 1565-1603 ○

- 29 Fullerene nanowhisker nanocompositeCurrent stance and high-tech opportunities. **2022**, 61, 1908-1923 ○
- 28 Nickel Oxide Thin Films for Oxygen Evolution Reaction. 543-547 ○
- 27 Poly(methyl methacrylate)/Fullerene nanocompositeFactors and applications. **2022**, 61, 593-608 ○
- 26 Recent Development of Self-Supported Alkaline Hydrogen Evolution Reaction Electrocatalysts for Industrial Electrolyzer. 2200178 ○
- 25 Prospects and challenges of renewable hydrogen generation in Bangladesh. **2023**, ○
- 24 Nd-GdPlatinum Doped TiO<sub>2</sub> Nanotube Arrays catalyst for water splitting in Alkaline Medium. **2023**, 100112 ○
- 23 Rational Design of Hydrogen Evolution Reaction Electrocatalysts for Commercial Alkaline Water Electrolysis. 2200404 ○
- 22 Quasi-Two-Dimensional Intermetallic Electride CeRuSi for Efficient Alkaline Hydrogen Evolution. **2023**, 13, 4752-4759 ○
- 21 Direct Laser Writing of Multimetal Bifunctional Catalysts for Overall Water Splitting. **2023**, 6, 3756-3768 ○
- 20 Enhancing efficiency of the ternary tri-chalcogenide MnPSe<sub>3</sub> towards hydrogen evolution reaction by activating its basal plane. **2023**, ○
- 19 Nanostructured Ternary Nickel-Based Mixed Anionic (Telluro)-Selenide as a Superior Catalyst for Oxygen Evolution Reaction. ○
- 18 Assessment of green hydrogen production in Morocco, using hybrid renewable sources (PV and wind). **2023**, ○
- 17 A Current Perspective on the Renewable Energy Hydrogen Production Process. **2023**, 32, 542-596 ○
- 16 Ultrathin reinforced composite separator for alkaline water electrolysis: Comprehensive performance evaluation. **2023**, ○
- 15 EPDM rubber-based membranes for electrochemical water splitting and carbon dioxide reduction reactions. ○
- 14 Development of crosslinked SEBS-based anion exchange membranes for water electrolysis: Investigation of the crosslinker effect. **2023**, ○
- 13 A review of renewable hydrogen hybrid energy systems towards a sustainable energy value chain. ○
- 12 Green hydrogen. **2023**, 573-619 ○

- 11 Lithiation-Regulated Iron Oxide Heterostructure for Hydrogen Evolution Reaction: Optimized Degree of Crystallinity for Enhanced Electrochemical Activity. **2023**, 11, 5918-5925
- 10 Recent Advances in High-Temperature Steam Electrolysis with Solid Oxide Electrolysers for Green Hydrogen Production. **2023**, 16, 3327
- 9 Water splitting over an ultrasonically synthesized NiFe/MoO<sub>3</sub>@CFP electrocatalyst. **2023**,
- 8 An analytical model for the velocity and gas fraction profiles near gas-evolving electrodes. **2023**,
- 7 Hydrogen electrolyser technologies and their modelling for sustainable energy production: A comprehensive review and suggestions. **2023**,
- 6 Performance Evolution of Typical Electrocatalysts with Electrolyte Temperature during Alkaline Water Electrolysis.
- 5 Solar-Driven H<sub>2</sub> Production in PVE Systems. **2023**, 341-373
- 4 Lie group theory, stability analysis with dispersion property, new soliton solutions and conserved quantities of 3D generalized nonlinear wave equation in liquid containing gas bubbles with applications in fluids. **2023**, 107261
- 3 Generation of green hydrogen using self-sustained regenerative fuel cells: Opportunities and challenges. **2023**,
- 2 Europium Molybdate/Molybdenum Disulfide Nanostructures with Efficient Electrocatalytic Activity for the Hydrogen Evolution Reaction. **2023**, 6, 7218-7228
- 1 Feasibility Study of PV-Powered Hydrogen Vehicles in Morocco: An Assessment. **2023**, 611-620