

Design of electrocatalysts for oxygen- and hydrogen-involving reactions

Chemical Society Reviews

44, 2060-2086

DOI: [10.1039/c4cs00470a](https://doi.org/10.1039/c4cs00470a)

Citation Report

#	ARTICLE	IF	CITATIONS
6	Three-dimensional Nitrogen-Doped Graphene Supported Molybdenum Disulfide Nanoparticles as an Advanced Catalyst for Hydrogen Evolution Reaction. <i>Scientific Reports</i> , 2015, 5, 17542.	1.6	156
8	Creating Highly Active Atomic Layer Deposited NiO Electrocatalysts for the Oxygen Evolution Reaction. <i>Advanced Energy Materials</i> , 2015, 5, 1500412.	10.2	217
10	Single-Crystal Semiconductors with Narrow Band Gaps for Solar Water Splitting. <i>Angewandte Chemie - International Edition</i> , 2015, 54, 10718-10732.	7.2	123
11	Nanoporous Graphene with Single-Atom Nickel Dopants: An Efficient and Stable Catalyst for Electrochemical Hydrogen Production. <i>Angewandte Chemie - International Edition</i> , 2015, 54, 14031-14035.	7.2	628
12	Self-Supported Cobalt Phosphide Mesoporous Nanorod Arrays: A Flexible and Bifunctional Electrode for Highly Active Electrocatalytic Water Reduction and Oxidation. <i>Advanced Functional Materials</i> , 2015, 25, 7337-7347.	7.8	688
13	Coupling Mo ₂ C with Nitrogen-Rich Nanocarbon Leads to Efficient Hydrogen Evolution Electrocatalytic Sites. <i>Angewandte Chemie - International Edition</i> , 2015, 54, 10752-10757.	7.2	674
14	Combinatorial Search for High-Activity Hydrogen Catalysts Based on Transition-Metal-Embedded Graphitic Carbons. <i>Advanced Energy Materials</i> , 2015, 5, 1501423.	10.2	66
17	Metal-Free Carbonaceous Materials as Promising Heterogeneous Catalysts. <i>ChemCatChem</i> , 2015, 7, 2765-2787.	1.8	118
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19	Engineering of Carbon-Based Electrocatalysts for Emerging Energy Conversion: From Fundamentality to Functionality. <i>Advanced Materials</i> , 2015, 27, 5372-5378.	11.1	246
20	Spatially Confined Hybridization of Nanometer-Sized NiFe Hydroxides into Nitrogen-Doped Graphene Frameworks Leading to Superior Oxygen Evolution Reactivity. <i>Advanced Materials</i> , 2015, 27, 4516-4522.	11.1	612
21	Charge Mediated Semiconducting-to-Metallic Phase Transition in Molybdenum Disulfide Monolayer and Hydrogen Evolution Reaction in New 1T [±] Phase. <i>Journal of Physical Chemistry C</i> , 2015, 119, 13124-13128.	1.5	295
22	Recent advances in heterogeneous electrocatalysts for the hydrogen evolution reaction. <i>Journal of Materials Chemistry A</i> , 2015, 3, 14942-14962.	5.2	1,061
23	Enhanced Cycling Stability of Hybrid Li-Air Batteries Enabled by Ordered Pd ₃ Fe Intermetallic Electrocatalyst. <i>Journal of the American Chemical Society</i> , 2015, 137, 7278-7281.	6.6	149
24	Graphitic Carbon Nitride/Graphene Hybrids as New Active Materials for Energy Conversion and Storage. <i>ChemNanoMat</i> , 2015, 1, 298-318.	1.5	117
25	Photocatalysis fundamentals and surface modification of TiO ₂ nanomaterials. <i>Chinese Journal of Catalysis</i> , 2015, 36, 2049-2070.	6.9	458
26	Polydopamine-graphene oxide derived mesoporous carbon nanosheets for enhanced oxygen reduction. <i>Nanoscale</i> , 2015, 7, 12598-12605.	2.8	104
27	Enhanced photocatalytic H ₂ evolution over noble-metal-free NiS cocatalyst modified CdS nanorods/g-C ₃ N ₄ heterojunctions. <i>Journal of Materials Chemistry A</i> , 2015, 3, 18244-18255.	5.2	306

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29	Heteroatom-Doped Graphene-Based Materials for Energy-Relevant Electrocatalytic Processes. <i>ACS Catalysis</i> , 2015, 5, 5207-5234.	5.5	800
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31	A nickel nanoparticle/carbon quantum dot hybrid as an efficient electrocatalyst for hydrogen evolution under alkaline conditions. <i>Journal of Materials Chemistry A</i> , 2015, 3, 18598-18604.	5.2	87
32	Novel Fe@Ni-Graphene composite electrode for hydrogen production. <i>International Journal of Hydrogen Energy</i> , 2015, 40, 10453-10462.	3.8	78
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42	Artificial photosynthesis: Where are we now? Where can we go?. <i>Journal of Photochemistry and Photobiology C: Photochemistry Reviews</i> , 2015, 25, 32-45.	5.6	158
43	Molecular metal-N _x centres in porous carbon for electrocatalytic hydrogen evolution. <i>Nature Communications</i> , 2015, 6, 7992.	5.8	575
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47	Two-Dimensional π -Conjugated Metal Bis(dithiolene) Complex Nanosheets as Selective Catalysts for Oxygen Reduction Reaction. <i>Journal of Physical Chemistry C</i> , 2015, 119, 28028-28037.	1.5	76
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55	Ultralong PtNi alloy nanowires enabled by the coordination effect with superior ORR durability. <i>RSC Advances</i> , 2016, 6, 71501-71506.	1.7	37
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375	Engineering High-Energy Interfacial Structures for High-Performance Oxygen-Involving Electrocatalysis. <i>Angewandte Chemie</i> , 2017, 129, 8659-8663.	1.6	36
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807	Chainmail catalyst of ultrathin P-doped carbon shell-encapsulated nickel phosphides on graphene towards robust and efficient hydrogen generation. <i>Journal of Materials Chemistry A</i> , 2018, 6, 24107-24113.	5.2	44
808	(Keynote) One-Pot Synthesis of Manganese Oxides and Cobalt Phosphides Nanohybrids with Abundant Hetero-Interfaces in Amorphous Matrix for Efficient Hydrogen Evolution in Alkaline Solution. <i>ECS Transactions</i> , 2018, 88, 381-397.	0.3	0
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826	Recent progress in transition metal phosphides with enhanced electrocatalysis for hydrogen evolution. <i>Nanoscale</i> , 2018, 10, 21617-21624.	2.8	312
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831	Synthesis of transition metal sulfide and reduced graphene oxide hybrids as efficient electrocatalysts for oxygen evolution reactions. <i>Royal Society Open Science</i> , 2018, 5, 180927.	1.1	14
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988	Coupling confinement activating cobalt oxide ultra-small clusters for high-turnover oxygen evolution electrocatalysis. <i>Journal of Materials Chemistry A</i> , 2018, 6, 15684-15689.	5.2	25
989	Well-elaborated, mechanochemically synthesized Fe-TPP@ZIF precursors (Fe-TPP = tetraphenylporphine) for Zn-air batteries. <i>Nano Energy</i> , 2018, 52, 29-37.	8.2	108
990	Strong Electronic Interaction in Dual-Cation-Incorporated NiSe ₂ Nanosheets with Lattice Distortion for Highly Efficient Overall Water Splitting. <i>Advanced Materials</i> , 2018, 30, e1802121.	11.1	361

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991	Recent Development of Zeolitic Imidazolate Frameworks (ZIFs) Derived Porous Carbon Based Materials as Electrocatalysts. <i>Advanced Energy Materials</i> , 2018, 8, 1801257.	10.2	242
992	Nitrogen-rich 1T-MoS ₂ layered nanostructures using alkyl amines for high catalytic performance toward hydrogen evolution. <i>Nanoscale</i> , 2018, 10, 14726-14735.	2.8	39
993	A new 2D Co ₅ -cluster based MOF: Crystal structure, magnetic properties and electrocatalytic hydrogen evolution reaction. <i>Inorganic Chemistry Communication</i> , 2018, 95, 73-77.	1.8	24
994	Bifunctionality from Synergy: CoP Nanoparticles Embedded in Amorphous CoO _x Nanoplates with Heterostructures for Highly Efficient Water Electrolysis. <i>Advanced Science</i> , 2018, 5, 1800514.	5.6	124
995	Monolithic nanoporous Ni Fe alloy by dealloying laser processed Ni Fe Al as electrocatalyst toward oxygen evolution reaction. <i>International Journal of Hydrogen Energy</i> , 2018, 43, 15234-15244.	3.8	40
996	Single-Atom Catalysts: Synthetic Strategies and Electrochemical Applications. <i>Joule</i> , 2018, 2, 1242-1264.	11.7	1,618
997	Metal-Organic Framework Based Catalysts for Hydrogen Evolution. <i>Advanced Energy Materials</i> , 2018, 8, 1801193.	10.2	345
998	Understanding Surface-Mediated Electrochemical Reactions: CO ₂ Reduction and Beyond. <i>ACS Catalysis</i> , 2018, 8, 8121-8129.	5.5	194
999	Quasi-single-crystalline CoO hexagrams with abundant defects for highly efficient electrocatalytic water oxidation. <i>Chemical Science</i> , 2018, 9, 6961-6968.	3.7	56
1000	Hierarchical 3D macrosheets composed of interconnected <i>in situ</i> cobalt catalyzed nitrogen doped carbon nanotubes as superior bifunctional oxygen electrocatalysts for rechargeable Zn-air batteries. <i>Journal of Materials Chemistry A</i> , 2018, 6, 15523-15529.	5.2	68
1001	A facet-controlled Rh ₃ Pb ₂ S ₂ nanocage as an efficient and robust electrocatalyst toward the hydrogen evolution reaction. <i>Nanoscale</i> , 2018, 10, 9845-9850.	2.8	28
1002	A porphyrin covalent organic framework cathode for flexible Zn-air batteries. <i>Energy and Environmental Science</i> , 2018, 11, 1723-1729.	15.6	298
1003	Hierarchical NiSe ₂ sheet-like nano-architectures as an efficient and stable bifunctional electrocatalyst for overall water splitting: Phase and morphology engineering. <i>Electrochimica Acta</i> , 2018, 279, 195-203.	2.6	49
1004	Intermetallic <i>hcp</i> -PtBi/ <i>fcc</i> -Pt Core/Shell Nanoplates Enable Efficient Bifunctional Oxygen Reduction and Methanol Oxidation Electrocatalysis. <i>ACS Catalysis</i> , 2018, 8, 5581-5590.	5.5	153
1005	Material descriptors for photocatalyst/catalyst design. <i>Wiley Interdisciplinary Reviews: Computational Molecular Science</i> , 2018, 8, e1369.	6.2	34
1006	Crystal Structure-dependent Thermal Stability and Catalytic Performance of AuRu ₃ Solid-solution Alloy Nanoparticles. <i>Chemistry Letters</i> , 2018, 47, 559-561.	0.7	8
1007	Carbon Thin-Layer-Protected Active Sites for ZIF-8-Derived Nitrogen-Enriched Carbon Frameworks/Expanded Graphite as Metal-Free Catalysts for Oxygen Reduction in Acidic Media. <i>Chemistry of Materials</i> , 2018, 30, 6014-6025.	3.2	74
1008	Defect- and Phase-Induced Acceleration of Electrocatalytic Hydrogen Production by Ultrathin and Small MoS ₂ -Decorated rGO Sheets. <i>ACS Applied Nano Materials</i> , 2018, 1, 4622-4632.	2.4	33

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1010	Synthesis of polyoxometalates derived bifunctional catalyst towards efficient overall water splitting in neutral and alkaline medium. <i>Journal of Colloid and Interface Science</i> , 2018, 532, 774-781.	5.0	38
1011	Boosting Hydrogen Production by Anodic Oxidation of Primary Amines over a NiSe Nanorod Electrode. <i>Angewandte Chemie</i> , 2018, 130, 13347-13350.	1.6	69
1012	Transition Metal Carbide Complex Architectures for Energy-Related Applications. <i>Chemistry - A European Journal</i> , 2018, 24, 16716-16736.	1.7	27
1013	Trimetallic Au@PtPd Mesoporous Nanorods as Efficient Electrocatalysts for the Oxygen Reduction Reaction. <i>ACS Applied Energy Materials</i> , 2018, 1, 4891-4898.	2.5	24
1014	Nickel Molybdenum Nitride Nanorods Grown on Ni Foam as Efficient and Stable Bifunctional Electrocatalysts for Overall Water Splitting. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 30400-30408.	4.0	97
1015	Cobalt-Cobalt Phosphide Nanoparticles@Nitrogen-Phosphorus Doped Carbon/Graphene Derived from Cobalt Ions Adsorbed <i>Saccharomycete</i> Yeasts as an Efficient, Stable, and Large-Current-Density Electrode for Hydrogen Evolution Reactions. <i>Advanced Functional Materials</i> , 2018, 28, 1801332.	7.8	102
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1017	Facile synthesis of ZnCo-ZIFs-derived Zn _x Co _{3-x} O ₄ hollow polyhedron for efficient oxygen evolution reduction. <i>Journal of Colloid and Interface Science</i> , 2018, 532, 650-656.	5.0	33
1018	Stabilizing the oxygen vacancies and promoting water-oxidation kinetics in cobalt oxides by lower valence-state doping. <i>Nano Energy</i> , 2018, 53, 144-151.	8.2	114
1019	Highly Dispersed Co-B/N Codoped Carbon Nanospheres on Graphene for Synergistic Effects as Bifunctional Oxygen Electrocatalysts. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 30460-30469.	4.0	32
1020	Highly Dispersed Platinum on Honeycomb-like NiO@Ni Film as a Synergistic Electrocatalyst for the Hydrogen Evolution Reaction. <i>ACS Catalysis</i> , 2018, 8, 8866-8872.	5.5	141
1021	Interfacial proton enrichment enhances proton-coupled electrocatalytic reactions. <i>Journal of Materials Chemistry A</i> , 2018, 6, 17771-17777.	5.2	29
1022	Hydrogen evolution reaction (HER) on Au@Ag ultrananoclusters as electro-catalysts. <i>Nanoscale</i> , 2018, 10, 17730-17737.	2.8	21
1023	Monodisperse and Tiny Co ₂ N _{0.67} Nanocrystals Uniformly Embedded over Two Curving Surfaces of Hollow Carbon Microfibers as Efficient Electrocatalyst for Oxygen Evolution Reaction. <i>ACS Applied Nano Materials</i> , 2018, 1, 4461-4473.	2.4	23
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1025	Metal-Organic-Framework-Derived Hollow CoS _x @MoS ₂ Microcubes as Superior Bifunctional Electrocatalysts for Hydrogen Evolution and Oxygen Evolution Reactions. <i>ACS Sustainable Chemistry and Engineering</i> , 2018, 6, 12961-12968.	3.2	89
1026	Carbon-Supported Single Atom Catalysts for Electrochemical Energy Conversion and Storage. <i>Advanced Materials</i> , 2018, 30, e1801995.	11.1	479

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1028	Heteroatom-doped carbon nanospheres derived from cuttlefish ink: A bifunctional electrocatalyst for oxygen reduction and evolution. <i>International Journal of Hydrogen Energy</i> , 2018, 43, 17708-17717.	3.8	27
1029	Ambient Electrochemical Synthesis of Ammonia from Nitrogen and Water Catalyzed by Flower-Like Gold Microstructures. <i>ChemSusChem</i> , 2018, 11, 3480-3485.	3.6	176
1030	Scalable fabrication of $Zn_xCd_{1-x}S$ double-shell hollow nanospheres for highly efficient hydrogen production. <i>Applied Catalysis B: Environmental</i> , 2018, 239, 309-316.	10.8	82
1031	Nanodendrites of platinum-group metals for electrocatalytic applications. <i>Nano Research</i> , 2018, 11, 6111-6140.	5.8	54
1032	Hierarchical molybdenum carbide/N-doped carbon as efficient electrocatalyst for hydrogen evolution reaction in alkaline solution. <i>International Journal of Hydrogen Energy</i> , 2018, 43, 17244-17251.	3.8	19
1033	A Review of Precious-Metal-Free Bifunctional Oxygen Electrocatalysts: Rational Design and Applications in Zn-Air Batteries. <i>Advanced Functional Materials</i> , 2018, 28, 1803329.	7.8	524
1034	Boosting Hydrogen Production by Anodic Oxidation of Primary Amines over a NiSe Nanorod Electrode. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 13163-13166.	7.2	312
1035	Nanostructured NiFe (oxy)hydroxide with easily oxidized Ni towards efficient oxygen evolution reactions. <i>Journal of Materials Chemistry A</i> , 2018, 6, 16810-16817.	5.2	61
1036	Using Multifunctional Polymeric Soft Template for Synthesizing Nitrogen and Phosphorus Co-Doped Mesoporous Carbon Frameworks Electrocatalysts for Oxygen Reduction Reaction. <i>ChemistrySelect</i> , 2018, 3, 9013-9020.	0.7	4
1037	Plasma-activated $Co_3(PO_4)_2$ nanosheet arrays with Co^{3+} -Rich surfaces for overall water splitting. <i>Journal of Power Sources</i> , 2018, 400, 190-197.	4.0	86
1038	N-doping goes sp-hybridized. <i>Nature Chemistry</i> , 2018, 10, 900-902.	6.6	17
1039	A Universal Strategy to Metal Wavy Nanowires for Efficient Electrochemical Water Splitting at pH-Universal Conditions. <i>Advanced Functional Materials</i> , 2018, 28, 1803722.	7.8	71
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1041	Metal-free catalysis based on nitrogen-doped carbon nanomaterials: a photoelectron spectroscopy point of view. <i>Beilstein Journal of Nanotechnology</i> , 2018, 9, 2015-2031.	1.5	10
1042	Double Perovskites as Model Bifunctional Catalysts toward Rational Design: The Correlation between Electrocatalytic Activity and Complex Spin Configuration. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 19746-19754.	4.0	41
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1044	Graphene Layer Encapsulation of Non-Noble Metal Nanoparticles as Acid-Stable Hydrogen Evolution Catalysts. <i>ACS Energy Letters</i> , 2018, 3, 1539-1544.	8.8	57

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1046	Facile synthesis of silk-cocoon S-rich cobalt polysulfide as an efficient catalyst for the hydrogen evolution reaction. Energy and Environmental Science, 2018, 11, 2467-2475.	15.6	91
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1048	Amine group induced high activity of highly torn amine functionalized nitrogen-doped graphene as the metal-free catalyst for hydrogen evolution reaction. Carbon, 2018, 138, 169-178.	5.4	46
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1050	Three-dimensional-networked Ni ₂ P/Ni ₃ S ₂ heteronanoflake arrays for highly enhanced electrochemical overall-water-splitting activity. Nano Energy, 2018, 51, 26-36.	8.2	378
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1053	Preparation of 2D material dispersions and their applications. Chemical Society Reviews, 2018, 47, 6224-6266.	18.7	459
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1059	Single Tungsten Atoms Supported on MOF-Derived N-Doped Carbon for Robust Electrochemical Hydrogen Evolution. Advanced Materials, 2018, 30, e1800396.	11.1	427
1060	Decoration of Bi ₂ Se ₃ nanosheets with a thin Bi ₂ SeO ₂ layer for visible-light-driven overall water splitting. International Journal of Hydrogen Energy, 2018, 43, 10950-10958.	3.8	17
1061	In-Situ Formed Hydroxide Accelerating Water Dissociation Kinetics on Co ₃ N for Hydrogen Production in Alkaline Solution. ACS Applied Materials & Interfaces, 2018, 10, 22102-22109.	4.0	54
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1067	Breaking the scaling relations for oxygen reduction reaction on nitrogen-doped graphene by tensile strain. Carbon, 2018, 139, 129-136.	5.4	23
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1069	Rational synthesis of CaCo ₂ O ₄ nanoplate as an earth-abundant electrocatalyst for oxygen evolution reaction. Journal of Energy Chemistry, 2019, 31, 125-131.	7.1	12
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1072	Designing hybrid materials with multifunctional interfaces for wound dressing, electrocatalysis, and chemical separation. Journal of Colloid and Interface Science, 2019, 533, 106-125.	5.0	16
1073	Recent Approaches to Design Electrocatalysts Based on Metal-Organic Frameworks and Their Derivatives. Chemistry - an Asian Journal, 2019, 14, 3474-3501.	1.7	34
1074	Ternary MnO/CoMn alloy@N-doped graphitic composites derived from a bi-metallic pigment as bi-functional electrocatalysts. Journal of Materials Chemistry A, 2019, 7, 20649-20657.	5.2	33
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1084	Electronic reconfiguration of Co ₂ P induced by Cu doping enhancing oxygen reduction reaction activity in zinc-air batteries. <i>Journal of Materials Chemistry A</i> , 2019, 7, 21232-21243.	5.2	46
1085	First-principles design of highly-efficient earth-abundant electrocatalysts for hydrogen evolution reaction: TiF ₃ and its analogs. <i>Applied Surface Science</i> , 2019, 495, 143623.	3.1	13
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1087	Ultrafine Defective RuO ₂ Electrocatalyst Integrated on Carbon Cloth for Robust Water Oxidation in Acidic Media. <i>Advanced Energy Materials</i> , 2019, 9, 1901313.	10.2	182
1088	A unique amorphous cobalt-phosphide-boride bifunctional electrocatalyst for enhanced alkaline water-splitting. <i>Applied Catalysis B: Environmental</i> , 2019, 259, 118051.	10.8	112
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1091	In Situ Transformation of Prussian Blue Analogue Derived Bimetallic Carbide Nanocubes by Water Oxidation: Applications for Energy Storage and Conversion. <i>Chemistry - A European Journal</i> , 2020, 26, 4052-4062.	1.7	23
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1095	Surface evolution and reconstruction of oxygen-abundant FeP _i /NiFeP synergy in NiFe phosphides for efficient water oxidation. <i>Journal of Materials Chemistry A</i> , 2019, 7, 18925-18931.	5.2	37
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1097	Intermediate Modulation on Noble Metal Hybridized to 2D Metal-Organic Framework for Accelerated Water Electrocatalysis. <i>CheM</i> , 2019, 5, 2429-2441.	5.8	150
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1100	sp ² /sp ³ Framework from Diamond Nanocrystals: A Key Bridge of Carbonaceous Structure to Carbocatalysis. <i>ACS Catalysis</i> , 2019, 9, 7494-7519.	5.5	86
1101	Nitrogen-doped Graphene Chainmail Wrapped IrCo Alloy Particles on Nitrogen-doped Graphene Nanosheet for Highly Active and Stable Full Water Splitting. <i>ChemCatChem</i> , 2019, 11, 5457-5465.	1.8	20
1102	Synthesis, Structure, and Magnetic Properties of B-doped Fe ₃ N@C Magnetic Nanomaterial as Catalyst for the Hydrogen Evolution Reaction. <i>Physica Status Solidi (B): Basic Research</i> , 2019, 256, 1900111.	0.7	5
1103	In-situ synthesis of ternary metal phosphides Ni _x Co _{1-x} P decorated Zn _{0.5} Cd _{0.5} S nanorods with significantly enhanced photocatalytic hydrogen production activity. <i>Chemical Engineering Journal</i> , 2019, 378, 122220.	6.6	55
1104	Defective layered double hydroxide formed by H ₂ O ₂ treatment act as highly efficient electrocatalytic for oxygen evolution reaction. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 21858-21864.	3.8	18
1105	Cobalt-Coordinated Sulfur-Doped Graphitic Carbon Nitride on Reduced Graphene Oxide: An Efficient Metal-(N,S)-C-Class Bifunctional Electrocatalyst for Overall Water Splitting in Alkaline Media. <i>ACS Sustainable Chemistry and Engineering</i> , 2019, 7, 15373-15384.	3.2	57
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1109	Bimetal-Organic Framework Derived High-Valence-State Cu-doped Co ₃ O ₄ Porous Nanosheet Arrays for Efficient Oxygen Evolution and Water Splitting. <i>ChemCatChem</i> , 2019, 11, 4420-4426.	1.8	37
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1111	A surface-mounted MOF thin film with oriented nanosheet arrays for enhancing the oxygen evolution reaction. <i>Journal of Materials Chemistry A</i> , 2019, 7, 18519-18528.	5.2	92
1112	Preparation of hierarchical trimetallic coordination polymer film as efficient electrocatalyst for oxygen evolution reaction. <i>Chemical Communications</i> , 2019, 55, 9343-9346.	2.2	19
1113	Interfacial effects in supported catalysts for electrocatalysis. <i>Journal of Materials Chemistry A</i> , 2019, 7, 23432-23450.	5.2	94
1114	Ultrasonic-Assisted Synthesis of Amorphous Polyelemental Hollow Nanoparticles as Efficient and Stable Bifunctional Electrocatalysts for Overall Water Splitting. <i>Advanced Materials Interfaces</i> , 2019, 6, 1900586.	1.9	24
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1120	Channel-Rich RuCu Nanosheets for pH-Universal Overall Water Splitting Electrocatalysis. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 13983-13988.	7.2	274
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1267	Single Transition Metal Atom-Doped Graphene Supported on a Nickel Substrate: Enhanced Oxygen Reduction Reactions Modulated by Electron Coupling. <i>Journal of Physical Chemistry C</i> , 2019, 123, 3703-3710.	1.5	27
1268	Graphene dot armored PtMo nanosponge as a highly efficient and stable electrocatalyst for hydrogen evolution reactions in both acidic and alkaline media. <i>Carbon</i> , 2019, 146, 116-124.	5.4	33
1269	Hierarchical core-shell structured CoNi ₂ S ₄ /Ni ₃ S ₂ @Ni(OH) ₂ nanosheet arrays as electrode for electrochemical energy storage. <i>Journal of Alloys and Compounds</i> , 2019, 785, 684-691.	2.8	30
1270	Heterogeneous NiSe ₂ /Ni Ultrafine Nanoparticles Embedded into an N,S-Codoped Carbon Framework for pH-Universal Hydrogen Evolution Reaction. <i>ACS Sustainable Chemistry and Engineering</i> , 2019, 7, 4119-4127.	3.2	29
1271	Hollow coreâ€“shell NiCo ₂ S ₄ @MoS ₂ dodecahedrons with enhanced performance for supercapacitors and hydrogen evolution reaction. <i>New Journal of Chemistry</i> , 2019, 43, 3601-3608.	1.4	70
1272	Advances in constructing polymeric carbon-nitride-based nanocomposites and their applications in energy chemistry. <i>Sustainable Energy and Fuels</i> , 2019, 3, 611-655.	2.5	47
1273	Facile in situ fabrication of Co nanoparticles embedded in 3D N-enriched mesoporous carbon foam electrocatalyst with enhanced activity and stability toward oxygen reduction reaction. <i>Journal of Materials Science</i> , 2019, 54, 5412-5423.	1.7	47
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1275	Electrospun MOF-Based FeCo Nanoparticles Embedded in Nitrogen-Doped Mesoporous Carbon Nanofibers as an Efficient Bifunctional Catalyst for Oxygen Reduction and Oxygen Evolution Reactions in Zinc-Air Batteries. <i>ACS Sustainable Chemistry and Engineering</i> , 2019, 7, 5462-5475.	3.2	146
1276	Metal/graphene heterobilayers as hydrogen evolution reaction cathodes: a first-principles study. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 4594-4599.	1.3	6
1277	Solvent-free assembly of Co/Fe-containing MOFs derived N-doped mesoporous carbon nanosheets for ORR and HER. <i>Carbon</i> , 2019, 146, 671-679.	5.4	117
1278	Metal support effects in electrocatalysis at hexagonal boron nitride. <i>Chemical Communications</i> , 2019, 55, 628-631.	2.2	34
1279	Layered and two dimensional metal oxides for electrochemical energy conversion. <i>Energy and Environmental Science</i> , 2019, 12, 41-58.	15.6	310

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1281	Using lithium chloride as a medium to prepare N,P-codoped carbon nanosheets for oxygen reduction and evolution reactions. <i>Inorganic Chemistry Frontiers</i> , 2019, 6, 417-422.	3.0	5
1282	Artesunate enhances adriamycin cytotoxicity by inhibiting glycolysis in adriamycin-resistant chronic myeloid leukemia K562/ADR cells. <i>RSC Advances</i> , 2019, 9, 1004-1014.	1.7	3
1283	<i>In situ</i> nitridated porous nanosheet networked Co ₃ O ₄ @Co ₄ N heteronanostructures supported on hydrophilic carbon cloth for highly efficient electrochemical hydrogen evolution. <i>Journal of Materials Chemistry A</i> , 2019, 7, 775-782.	5.2	63
1284	Asymmetric electrodes with a transition metal disulfide heterostructure and amorphous bimetallic hydroxide for effective alkaline water electrolysis. <i>Journal of Materials Chemistry A</i> , 2019, 7, 2895-2900.	5.2	31
1285	Intercalated complexes of 1Tâ€²-MoS ₂ nanosheets with alkylated phenylenediamines as excellent catalysts for electrochemical hydrogen evolution. <i>Journal of Materials Chemistry A</i> , 2019, 7, 2334-2343.	5.2	41
1286	Boosting electrochemical water splitting <i>via</i> ternary NiMoCo hybrid nanowire arrays. <i>Journal of Materials Chemistry A</i> , 2019, 7, 2156-2164.	5.2	163
1287	Active Pore-Edge Engineering of Single-Layer Niobium Diselenide Porous Nanosheets Electrode for Hydrogen Evolution. <i>Nanomaterials</i> , 2019, 9, 751.	1.9	11
1288	Engineering multiphase for activating electroactive sites for highly efficient hydrogen evolution: Experimental and theoretical investigation. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 13323-13333.	3.8	2
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1294	MoS ₂ Coexisting in 1T and 2H Phases Synthesized by Common Hydrothermal Method for Hydrogen Evolution Reaction. <i>Nanomaterials</i> , 2019, 9, 844.	1.9	117
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1297	Carbon-based hydrogels: synthesis and their recent energy applications. <i>Journal of Materials Chemistry A</i> , 2019, 7, 15491-15518.	5.2	124

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1299	Rational construction of cross-linked porous nickel arrays for efficient oxygen evolution reaction. <i>Chinese Journal of Catalysis</i> , 2019, 40, 1063-1069.	6.9	9
1300	Contemporaneous oxidation state manipulation to accelerate intermediate desorption for overall water electrolysis. <i>Chemical Communications</i> , 2019, 55, 8313-8316.	2.2	7
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1304	Tailoring of Metal Boride Morphology via Anion for Efficient Water Oxidation. <i>Advanced Energy Materials</i> , 2019, 9, 1901503.	10.2	79
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1306	Room-temperature photocatalytic methanol fuel cell based on one-dimension semiconductor photoanode: Intrinsic mechanism of photogenerated charge separation. <i>Electrochimica Acta</i> , 2019, 318, 413-421.	2.6	17
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1321	Enhancing the electrocatalytic activity of NiMoO ₄ through a post-phosphorization process for oxygen evolution reaction. <i>Catalysis Communications</i> , 2019, 129, 105725.	1.6	14
1322	Hard-templated preparation of mesoporous cobalt phosphide as an oxygen evolution electrocatalyst. <i>Electrochemistry Communications</i> , 2019, 104, 106476.	2.3	17
1323	Novel nickel-cobalt phosphite with face-sharing octahedra derived electrocatalyst for efficient water splitting. <i>Inorganic Chemistry Frontiers</i> , 2019, 6, 2014-2023.	3.0	14
1324	Nanosheets assembled into nickel sulfide nanospheres with enriched Ni ³⁺ active sites for efficient water-splitting and zinc-air batteries. <i>Journal of Materials Chemistry A</i> , 2019, 7, 23787-23793.	5.2	76
1325	Heterostructured Bismuth Vanadate/Cobalt Phosphate Photoelectrodes Promote TEMPO-Mediated Oxidation of 5-Hydroxymethylfurfural. <i>ChemElectroChem</i> , 2019, 6, 3387-3392.	1.7	39
1326	Free-Standing Porous Cu-Based Nanowires as Robust Electrocatalyst for Alkaline Oxygen Evolution Reaction. <i>Catalysis Letters</i> , 2019, 149, 2376-2382.	1.4	0
1327	Ni-MoS ₂ hetero-nanosheet array electrocatalysts for efficient overall water splitting. <i>Sustainable Energy and Fuels</i> , 2019, 3, 2056-2066.	2.5	61
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1329	Enhanced Electrocatalytic Oxygen Evolution Activity by Tuning Both the Oxygen Vacancy and Orbital Occupancy of Site Metal Cation in NdNiO ₃ . <i>Advanced Functional Materials</i> , 2019, 29, 1902449.	7.8	72
1330	Mo-Doped NiCu as an efficient and stable electrocatalyst for the hydrogen evolution reaction. <i>New Journal of Chemistry</i> , 2019, 43, 9652-9657.	1.4	22
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1333	Structure-Related Electrocatalytic Performance of N/C-Supported Fe-Ni Nanoparticles toward Oxygen Reduction. <i>Journal of Physical Chemistry C</i> , 2019, 123, 16250-16256.	1.5	5

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1335	Co Doping and 1T Phase Jointly Enhanced HER Activity for Co-1T/2H MoS ₂ . <i>IOP Conference Series: Earth and Environmental Science</i> , 2019, 267, 022044.	0.2	2
1336	In-situ surface selective removal: An efficient way to prepare water oxidation catalyst. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 14955-14967.	3.8	13
1337	Magnetic field enhancing electrocatalysis of Co ₃ O ₄ /NF for oxygen evolution reaction. <i>Journal of Power Sources</i> , 2019, 433, 226704.	4.0	91
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1344	Prospects and Challenges for Solar Fertilizers. <i>Joule</i> , 2019, 3, 1578-1605.	11.7	153
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1346	Breaking the volcano-plot limits for Pt-based electrocatalysts by selective tuning adsorption of multiple intermediates. <i>Journal of Materials Chemistry A</i> , 2019, 7, 13635-13640.	5.2	24
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1353	Design strategies for developing non-precious metal based bi-functional catalysts for alkaline electrolyte based zinc-air batteries. <i>Materials Horizons</i> , 2019, 6, 1812-1827.	6.4	79
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1355	Modification of pyridinic N and O-rich defects in a bifunctional electrocatalyst with enhanced electrocatalytic performance. <i>Journal of Alloys and Compounds</i> , 2019, 789, 874-880.	2.8	8
1356	Rational design of two-dimensional hybrid Co/N-doped carbon nanosheet arrays for efficient bi-functional electrocatalysis. <i>Sustainable Energy and Fuels</i> , 2019, 3, 1757-1763.	2.5	11
1357	Thermal oxygen activation followed by in situ work function measurements over carbon-supported noble metal-based catalysts. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 16648-16656.	3.8	17
1358	Chestnut-like copper cobalt phosphide catalyst for all-pH hydrogen evolution reaction and alkaline water electrolysis. <i>Journal of Materials Chemistry A</i> , 2019, 7, 14271-14279.	5.2	67
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1361	Confined distribution of platinum clusters on MoO ₂ hexagonal nanosheets with oxygen vacancies as a high-efficiency electrocatalyst for hydrogen evolution reaction. <i>Nano Energy</i> , 2019, 62, 127-135.	8.2	143
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1364	Photo-enhanced Zn-air batteries with simultaneous highly efficient in situ H ₂ O ₂ generation for wastewater treatment. <i>Journal of Materials Chemistry A</i> , 2019, 7, 14129-14135.	5.2	36
1365	Metal-organic frameworks and their derivatives for metal-air batteries. <i>Energy Storage Materials</i> , 2019, 23, 757-771.	9.5	100
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1371	Interfacial Defect Engineering for Improved Portable Zinc-Air Batteries with a Broad Working Temperature. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 9459-9463.	7.2	139
1372	Coupling a Low Loading of Ir ₂ , Pt ₂ , or Pd ₃ P with Heteroatom-Doped Nanocarbon for Overall Water-Splitting Cells and Zinc-Air Batteries. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 16461-16473.	4.0	38
1373	Computational Screening of Defective Group IVA Monochalcogenides as Efficient Catalysts for Hydrogen Evolution Reaction. <i>Journal of Physical Chemistry C</i> , 2019, 123, 11791-11797.	1.5	24
1374	Transition Metal-Modified Exfoliated Zirconium Phosphate as an Electrocatalyst for the Oxygen Evolution Reaction. <i>ACS Applied Energy Materials</i> , 2019, 2, 3561-3567.	2.5	21
1375	Interfacial Defect Engineering for Improved Portable Zinc-Air Batteries with a Broad Working Temperature. <i>Angewandte Chemie</i> , 2019, 131, 9559-9563.	1.6	23
1376	Optimization of active surface area of flower like MoS ₂ using V-doping towards enhanced hydrogen evolution reaction in acidic and basic medium. <i>Applied Catalysis B: Environmental</i> , 2019, 254, 432-442.	10.8	185
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1384	Recent Progress in Bifunctional Electrocatalysts for Overall Water Splitting under Acidic Conditions. <i>ChemElectroChem</i> , 2019, 6, 3244-3253.	1.7	79
1385	Phase controllable synthesis of Ni ²⁺ post-modified CoP nanowire for enhanced oxygen evolution. <i>Nano Energy</i> , 2019, 62, 136-143.	8.2	66
1386	Atomically Dispersed Cobalt- and Nitrogen-Codoped Graphene toward Bifunctional Catalysis of Oxygen Reduction and Hydrogen Evolution Reactions. <i>ACS Sustainable Chemistry and Engineering</i> , 2019, 7, 9249-9256.	3.2	57
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1389	Understanding the Roadmap for Electrochemical Reduction of CO ₂ to Multi-Carbon Oxygenates and Hydrocarbons on Copper-Based Catalysts. <i>Journal of the American Chemical Society</i> , 2019, 141, 7646-7659.	6.6	711
1390	Anion-Modulated HER and OER Activities of 3D Ni-Based Interstitial Compound Heterojunctions for High-Efficiency and Stable Overall Water Splitting. <i>Advanced Materials</i> , 2019, 31, e1901174.	11.1	479
1391	Double-Site Ni-W Nanosheet for Best Alkaline HER Performance at High Current Density >500 mA cm ⁻² . <i>Advanced Materials Interfaces</i> , 2019, 6, 1900308.	1.9	24
1392	Ultrasmall MoP encapsulated in nitrogen-doped carbon hybrid frameworks for highly efficient hydrogen evolution reaction in both acid and alkaline solutions. <i>Inorganic Chemistry Frontiers</i> , 2019, 6, 1482-1489.	3.0	26
1393	Liquid-Solid Interfacial Assemblies of Soft Materials for Functional Freestanding Layered Membrane-Based Devices toward Electrochemical Energy Systems. <i>Advanced Energy Materials</i> , 2019, 9, 1804005.	10.2	18
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1396	Regulating the allocation of N and P in codoped graphene <i>via</i> supramolecular control to remarkably boost hydrogen evolution. <i>Energy and Environmental Science</i> , 2019, 12, 2697-2705.	15.6	77
1397	Transition metal-embedded two-dimensional C ₃ N as a highly active electrocatalyst for oxygen evolution and reduction reactions. <i>Journal of Materials Chemistry A</i> , 2019, 7, 12050-12059.	5.2	123
1398	<i>In situ</i> growth of a POMOF-derived nitride based composite on Cu foam to produce hydrogen with enhanced water dissociation kinetics. <i>Journal of Materials Chemistry A</i> , 2019, 7, 13559-13566.	5.2	39
1399	A nitrogen-doped CoP nanoarray over 3D porous Co foam as an efficient bifunctional electrocatalyst for overall water splitting. <i>Journal of Materials Chemistry A</i> , 2019, 7, 13242-13248.	5.2	143
1400	MoS ₂ nanosheet/MoS ₂ flake homostructures for efficient electrocatalytic hydrogen evolution. <i>Materials Research Express</i> , 2019, 6, 085005.	0.8	8
1401	Trimetallic Metal-Organic Framework Derived Carbon-Based Nanoflower Electrocatalysts for Efficient Overall Water Splitting. <i>Advanced Materials Interfaces</i> , 2019, 6, 1900290.	1.9	72
1402	Coupling Co ₂ P and CoP nanoparticles with copper ions incorporated Co ₉ S ₈ nanowire arrays for synergistically boosting hydrogen evolution reaction electrocatalysis. <i>Journal of Colloid and Interface Science</i> , 2019, 550, 10-16.	5.0	47
1403	Molybdenum carbide nanoparticles supported on nitrogen-doped carbon as efficient electrocatalysts for hydrogen evolution reaction. <i>Journal of Electroanalytical Chemistry</i> , 2019, 842, 89-97.	1.9	12
1404	Electrochemical Reduction of Carbon Dioxide to Formate on Palladium-Copper Alloy Nanoparticulate Electrode. <i>Electrochemistry</i> , 2019, 87, 134-138.	0.6	15
1405	Boundary activated hydrogen evolution reaction on monolayer MoS ₂ . <i>Nature Communications</i> , 2019, 10, 1348.	5.8	263

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1407	Searching General Sufficient and Necessary Conditions for Ultrafast Hydrogen-Evolving Electrocatalysis. <i>Advanced Functional Materials</i> , 2019, 29, 1900704.	7.8	94
1408	Framework-Porphyrin-Derived Single-Atom Bifunctional Oxygen Electrocatalysts and their Applications in Zn-Air Batteries. <i>Advanced Materials</i> , 2019, 31, e1900592.	11.1	256
1409	In situ doped CoCO ₃ /ZIF-67 derived Co-N-C/CoO _x catalysts for oxygen reduction reaction. <i>Applied Surface Science</i> , 2019, 481, 313-318.	3.1	25
1410	Molybdenum Disulfide Modified by Laser Irradiation for Catalyzing Hydrogen Evolution. <i>ACS Sustainable Chemistry and Engineering</i> , 2019, 7, 6999-7003.	3.2	53
1411	Cobalt based metal-organic frameworks and their derivatives for electrochemical energy conversion and storage. <i>Chemical Engineering Journal</i> , 2019, 370, 37-59.	6.6	96
1412	Nitrogen and phosphorous co-doped graphitic carbon encapsulated ultrafine OsP ₂ nanoparticles: a pH universal highly durable catalyst for hydrogen evolution reaction. <i>Chemical Communications</i> , 2019, 55, 4399-4402.	2.2	22
1413	Ionic-State Cobalt and Iron Co-doped Carbon Dots with Superior Electrocatalytic Activity for the Oxygen Evolution Reaction. <i>ChemElectroChem</i> , 2019, 6, 2088-2094.	1.7	26
1414	Mo-Doped Cobalt Phosphide Nanosheets for Efficient Hydrogen Generation in an Alkaline Media. <i>Energy Technology</i> , 2019, 7, 1900021.	1.8	21
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1416	Molecular-level design of Fe-N-C catalysts derived from Fe-dual pyridine coordination complexes for highly efficient oxygen reduction. <i>Journal of Catalysis</i> , 2019, 372, 245-257.	3.1	56
1417	Rational design of three-phase interfaces for electrocatalysis. <i>Nano Research</i> , 2019, 12, 2055-2066.	5.8	135
1418	Support and Interface Effects in Water-Splitting Electrocatalysts. <i>Advanced Materials</i> , 2019, 31, e1808167.	11.1	531
1419	NiRh nanosponges with highly efficient electrocatalytic performance for hydrogen evolution reaction. <i>Journal of Alloys and Compounds</i> , 2019, 789, 163-173.	2.8	28
1420	Cobalt oxide-based nanoarchitectures for electrochemical energy applications. <i>Progress in Materials Science</i> , 2019, 103, 596-677.	16.0	166
1421	Graphene nanoplatelets-carbon black hybrids as an efficient catalyst support for Pt nanoparticles for polymer electrolyte membrane fuel cells. <i>Renewable Energy</i> , 2019, 139, 1099-1110.	4.3	37
1422	Ni ₃ C core-shell nanoparticles encapsulated in N-doped bamboo-like carbon nanotubes towards efficient overall water splitting. <i>Inorganic Chemistry Frontiers</i> , 2019, 6, 1073-1080.	3.0	42
1423	Self-generated N-doped anodized stainless steel mesh for an efficient and stable overall water splitting electrocatalyst. <i>Applied Surface Science</i> , 2019, 480, 655-664.	3.1	55

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1425	Core@shell Fe_2FeOOH @polypyrrolle derived N, S-codoped Fe_3O_4 @N-doped porous carbon nanococoons for high performance supercapacitors. <i>Applied Surface Science</i> , 2019, 480, 582-592.	3.1	30
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1428	Ultrafine iron-cobalt nanoparticles embedded in nitrogen-doped porous carbon matrix for oxygen reduction reaction and zinc-air batteries. <i>Journal of Colloid and Interface Science</i> , 2019, 546, 113-121.	5.0	40
1429	Mesoporous cobalt selenide/nitrogen-doped carbon hybrid as bifunctional electrocatalyst for hydrogen evolution and oxygen reduction reactions. <i>Journal of Power Sources</i> , 2019, 423, 1-8.	4.0	38
1430	Chemical and structural origin of lattice oxygen oxidation in Co-Zn oxyhydroxide oxygen evolution electrocatalysts. <i>Nature Energy</i> , 2019, 4, 329-338.	19.8	977
1431	Surface reorganization engineering of the N-doped MoS_2 heterostructures MoO_x @N-doped MoS_2 by <i>in situ</i> electrochemical oxidation activation for efficient oxygen evolution reaction. <i>Journal of Materials Chemistry A</i> , 2019, 7, 10572-10580.	5.2	44
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1433	In-situ growth of nitrogen-doped mesoporous carbon nanostructure supported nickel metal nanoparticles for oxygen evolution reaction in an alkaline electrolyte. <i>Electrochimica Acta</i> , 2019, 306, 617-626.	2.6	7
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1435	Metal-organic framework based nanomaterials for electrocatalytic oxygen redox reaction. <i>Science China Chemistry</i> , 2019, 62, 417-429.	4.2	51
1436	Group VB transition metal dichalcogenides for oxygen reduction reaction and strain-enhanced activity governed by p-orbital electrons of chalcogen. <i>Nano Research</i> , 2019, 12, 925-930.	5.8	39
1437	Plasma-treated sponge-like NiAu nanoalloy for enhancing electrocatalytic performance in hydrogen evolution reaction. <i>Catalysis Today</i> , 2019, 337, 90-96.	2.2	16
1438	Chitin-derived porous carbon loaded with Co, N and S with enhanced performance towards electrocatalytic oxygen reduction, oxygen evolution, and hydrogen evolution reactions. <i>Electrochimica Acta</i> , 2019, 304, 350-359.	2.6	22
1439	Mechanistic Understanding of Size-Dependent Oxygen Reduction Activity and Selectivity over Pt/CNT Nanocatalysts. <i>European Journal of Inorganic Chemistry</i> , 2019, 2019, 3210-3217.	1.0	18
1440	Theoretical investigation on the high HER catalytic activity of 2D layered GeP_3 nanomaterials and its further enhancement by applying the surface strain or coupling with graphene. <i>Applied Surface Science</i> , 2019, 481, 272-280.	3.1	22
1441	Plasma engraved $\text{Bi}_{0.1}(\text{Ba}_{0.5}\text{Sr}_{0.5})_{0.9}\text{Co}_{0.8}\text{Fe}_{0.2}\text{O}_{3-\delta}$ perovskite for highly active and durable oxygen evolution. <i>Scientific Reports</i> , 2019, 9, 4210.	1.6	20

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1443	Cobalt-Vanadium Hydroxide Nanoneedles with a Free-Standing Structure as High-Performance Oxygen Evolution Reaction Electrocatalysts. <i>ChemElectroChem</i> , 2019, 6, 2050-2055.	1.7	24
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1446	Interfacial nickel nitride/sulfide as a bifunctional electrode for highly efficient overall water/seawater electrolysis. <i>Journal of Materials Chemistry A</i> , 2019, 7, 8117-8121.	5.2	150
1447	Electroactive Edge-Site-Enriched $\text{Co}_{0.9}\text{Fe}_{0.1}(\text{OH})_x$ Nanoplates for Efficient Overall Water Splitting. <i>ChemElectroChem</i> , 2019, 6, 2415-2422.	1.7	4
1448	Realizing Ultrafast Oxygen Evolution by Introducing Proton Acceptor into Perovskites. <i>Advanced Energy Materials</i> , 2019, 9, 1900429.	10.2	76
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1450	Transition Metal (Fe, Co and Ni)-Carbide-Nitride (M ₃ C ₃ N) Nanocatalysts: Structure and Electrocatalytic Applications. <i>ChemCatChem</i> , 2019, 11, 2780-2792.	1.8	46
1451	One-Pot Synthesis of Framework Porphyrin Materials and Their Applications in Bifunctional Oxygen Electrocatalysis. <i>Advanced Functional Materials</i> , 2019, 29, 1901301.	7.8	63
1452	In-situ local phase-transitioned MoSe ₂ in La _{0.5} Sr _{0.5} CoO _{3-δ} heterostructure and stable overall water electrolysis over 1000 hours. <i>Nature Communications</i> , 2019, 10, 1723.	5.8	143
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1454	Preparation and thermal performances of microencapsulated phase change materials with a nano-Al ₂ O ₃ -doped shell. <i>Journal of Thermal Analysis and Calorimetry</i> , 2019, 138, 233-241.	2.0	16
1455	Strongly coupled ultrasmall-Fe ₇ C ₃ /N-doped porous carbon hybrids for highly efficient Zn-air batteries. <i>Chemical Communications</i> , 2019, 55, 5651-5654.	2.2	35
1456	Ambient Fast Synthesis and Active Sites Deciphering of Hierarchical Foam-Like Trimetal-Organic Framework Nanostructures as a Platform for Highly Efficient Oxygen Evolution Electrocatalysis. <i>Advanced Materials</i> , 2019, 31, e1901139.	11.1	374
1457	Engineering hierarchical CoSe/NiFe layered-double-hydroxide nanoarrays as high efficient bifunctional electrocatalyst for overall water splitting. <i>Journal of Power Sources</i> , 2019, 425, 138-146.	4.0	110
1458	Electrocatalytic activity of new Mn ₃ O ₄ @oxidized graphene flakes nanocomposites toward oxygen reduction reaction. <i>Journal of Materials Science</i> , 2019, 54, 8919-8940.	1.7	26
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1461	Iridium-doped ZIFs-derived porous carbon-coated IrCo alloy as competent bifunctional catalyst for overall water splitting in acid medium. Electrochimica Acta, 2019, 307, 206-213.	2.6	42
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1470	A novel strategy to boost the oxygen evolution reaction activity of NiFe-LDHs with <i>in situ</i> synthesized 3D porous reduced graphene oxide matrix as both the substrate and electronic carrier. New Journal of Chemistry, 2019, 43, 6555-6562.	1.4	27
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1481	Application of the Electrochemical Oxygen Reduction Reaction (ORR) in Organic Synthesis. <i>Advanced Synthesis and Catalysis</i> , 2019, 361, 2804-2824.	2.1	45
1482	Spherical Murray-Type Assembly of Coâ€Naâ€C Nanoparticles as a High-Performance Trifunctional Electrocatalyst. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 9925-9933.	4.0	49
1483	Facile in-situ growth of Ni ₂ P/Fe ₂ P nanohybrids on Ni foam for highly efficient urea electrolysis. <i>Journal of Colloid and Interface Science</i> , 2019, 541, 279-286.	5.0	113
1484	Ni(<i>sc</i>)-doped anionic metalâ€organic framework nanowire arrays for enhancing the oxygen evolution reaction. <i>Chemical Communications</i> , 2019, 55, 4023-4026.	2.2	24
1485	<i>in situ</i> structural evolution of a nickel boride catalyst: synergistic geometric and electronic optimization for the oxygen evolution reaction. <i>Journal of Materials Chemistry A</i> , 2019, 7, 5288-5294.	5.2	69
1486	Coâ€Cuâ€WS _x ball-in-ball nanospheres as high-performance Pt-free bifunctional catalysts in efficient dye-sensitized solar cells and alkaline hydrogen evolution. <i>Journal of Materials Chemistry A</i> , 2019, 7, 6337-6347.	5.2	52
1487	Recent Advances in the Development of Water Oxidation Electrocatalysts at Mild pH. <i>Small</i> , 2019, 15, e1805103.	5.2	206
1488	Surface chemical-functionalization of ultrathin two-dimensional nanomaterials for electrocatalysis. <i>Materials Today Energy</i> , 2019, 12, 250-268.	2.5	48
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1497	Mo-doped Ni_2P hollow nanostructures: highly efficient and durable bifunctional electrocatalysts for alkaline water splitting. <i>Journal of Materials Chemistry A</i> , 2019, 7, 7636-7643.	5.2	110
1498	<i>In situ</i> synthesis of edge-enriched MoS_2 hierarchical nanorods with 1T/2H hybrid phases for highly efficient electrocatalytic hydrogen evolution. <i>CrystEngComm</i> , 2019, 21, 1984-1991.	1.3	29
1499	Transition-Metal-Doped RuIr Bifunctional Nanocrystals for Overall Water Splitting in Acidic Environments. <i>Advanced Materials</i> , 2019, 31, e1900510.	11.1	449
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1503	Self-Supportive NiFe hydroxide with High Electrocatalytic Activity for Oxygen and Hydrogen Evolution Reaction. <i>ChemistrySelect</i> , 2019, 4, 2153-2159.	0.7	4
1504	Synergistic Effects of $\text{Mo}_2\text{C}@ \text{Co}_x\text{Fe}_y$ Core-Shell Nanoparticles in Electrocatalytic Overall Water Splitting Reaction. <i>Energy Technology</i> , 2019, 7, 1801121.	1.8	7
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1507	Vertically aligned NiP_2 nanosheets with interlaced mesh network for highly efficient water splitting under alkaline and acid solutions. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 6535-6543.	3.8	35
1508	Syntheses, structures, magnetism and electrocatalytic oxygen evolution for four cobalt, manganese and copper complexes with dinuclear, 1D and 3D structures. <i>Dalton Transactions</i> , 2019, 48, 3467-3475.	1.6	8
1509	Cobalt-nickel phosphides@carbon spheres as highly efficient and stable electrocatalyst for hydrogen evolution reaction. <i>Catalysis Communications</i> , 2019, 124, 1-5.	1.6	20
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1512	Electrochemical CO_2 Fixation to \pm -Methylbenzyl Bromide in Divided Cells with Nonsacrificial Anodes and Aqueous Anolytes. <i>ACS Sustainable Chemistry and Engineering</i> , 2019, 7, 19631-19639.	3.2	33
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1522	Ultrathin carbon coated CoO nanosheet arrays as efficient electrocatalysts for the hydrogen evolution reaction. Catalysis Science and Technology, 2019, 9, 6957-6964.	2.1	24
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1526	Design of high-performance MoS ₂ edge supported single-metal atom bifunctional catalysts for overall water splitting <i>via</i> a simple equation. Nanoscale, 2019, 11, 20228-20237.	2.8	57
1527	Simple synthesis of a vacancy-rich NiO 2D/3D dendritic self-supported electrode for efficient overall water splitting. Nanoscale, 2019, 11, 22734-22742.	2.8	20
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1555	Unique NiFe NiCoO ₂ hollow polyhedron as bifunctional electrocatalysts for water splitting. <i>Journal of Energy Chemistry</i> , 2019, 33, 74-80.	7.1	61
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1557	Cu-Ni-CoSex quaternary porous nanocubes as enhanced Pt-free electrocatalysts for highly efficient dye-sensitized solar cells and hydrogen evolution in alkaline medium. <i>Chemical Engineering Journal</i> , 2019, 357, 11-20.	6.6	47
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1559	Copper-promoted nitrogen-doped carbon derived from zeolitic imidazole frameworks for oxygen reduction reaction. <i>Applied Surface Science</i> , 2019, 464, 344-350.	3.1	38
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1565	Defective graphene for electrocatalytic CO ₂ reduction. <i>Journal of Colloid and Interface Science</i> , 2019, 534, 332-337.	5.0	66
1566	Metal-organic frameworks derived reverse-encapsulation Co-NC@Mo ₂ C complex for efficient overall water splitting. <i>Nano Energy</i> , 2019, 57, 746-752.	8.2	316
1567	Nanowire-Templated Synthesis of FeN _x -Decorated Carbon Nanotubes as Highly Efficient, Universal-pH, Oxygen Reduction Reaction Catalysts. <i>Chemistry - A European Journal</i> , 2019, 25, 2637-2644.	1.7	16

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1572	Charge-Redistribution-Enhanced Nanocrystalline Ru@IrO _x Electrocatalysts for Oxygen Evolution in Acidic Media. <i>CheM</i> , 2019, 5, 445-459.	5.8	354
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1608	Earth abundant materials beyond transition metal dichalcogenides: A focus on electrocatalyzing hydrogen evolution reaction. <i>Nano Energy</i> , 2019, 58, 244-276.	8.2	298
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1627	CoxNi _y P embedded in nitrogen-doped porous carbon on Ni foam for efficient hydrogen evolution. <i>Applied Surface Science</i> , 2019, 469, 61-67.	3.1	14
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1661	Electronic and Structural Engineering of Carbon-Based Metal-Free Electrocatalysts for Water Splitting. <i>Advanced Materials</i> , 2019, 31, e1803625.	11.1	229
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1663	Modulating Electronic Structures of Inorganic Nanomaterials for Efficient Electrocatalytic Water Splitting. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 4484-4502.	7.2	340
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1676	Hierarchical bimetal embedded in carbon nanoflower electrocatalysts derived from metal-organic frameworks for efficient oxygen evolution reaction. <i>Journal of Alloys and Compounds</i> , 2020, 813, 152192.	2.8	27

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1678	Synergistically enhanced oxygen reduction electrocatalysis by atomically dispersed and nanoscaled Co species in three-dimensional mesoporous Co, N-codoped carbon nanosheets network. Applied Catalysis B: Environmental, 2020, 260, 118207.	10.8	74
1679	MOF-derived Co ₉ S ₈ /MoS ₂ embedded in tri-doped carbon hybrids for efficient electrocatalytic hydrogen evolution. Journal of Energy Chemistry, 2020, 44, 90-96.	7.1	32
1680	In-situ transformation to accordion-like core-shell structured metal@metallic hydroxide nanosheet from nanorod morphology for overall water-splitting in alkaline media. Journal of Colloid and Interface Science, 2020, 559, 105-114.	5.0	13
1681	A Novel Spherical Boron Phosphide as a High-Efficiency Overall Water Splitting Catalyst: A Density Functional Theory Study. Catalysis Letters, 2020, 150, 544-554.	1.4	7
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1683	Hollow Micro- and Nanomaterials: Synthesis and Applications. , 2020, , 1-38.		14
1684	Nanocarbon-Based Hybrids as Electrocatalysts for Hydrogen and Oxygen Evolution From Water Splitting. , 2020, , 379-418.		2
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1686	Multifunctional Transition Metal-Based Phosphides in Energy-Related Electrocatalysis. Advanced Energy Materials, 2020, 10, 1902104.	10.2	322
1687	Nickel-manganese bimetallic phosphides porous nanosheet arrays as highly active bifunctional hydrogen and oxygen evolution electrocatalysts for overall water splitting. Electrochimica Acta, 2020, 329, 135121.	2.6	43
1688	Role of local coordination in bimetallic sites for oxygen reduction: A theoretical analysis. Journal of Energy Chemistry, 2020, 44, 131-137.	7.1	36
1689	Zn-Doped Porous CoNiP Nanosheet Arrays as Efficient and Stable Bifunctional Electrocatalysts for Overall Water Splitting. Energy Technology, 2020, 8, 1901079.	1.8	20
1690	An Engineered Superhydrophilic/Superaerophobic Electrocatalyst Composed of the Supported CoMoS _x Chalcogel for Overall Water Splitting. Angewandte Chemie, 2020, 132, 1676-1682.	1.6	12
1691	Unpaired 3d Electrons on Atomically Dispersed Cobalt Centres in Coordination Polymers Regulate both Oxygen Reduction Reaction (ORR) Activity and Selectivity for Use in Zinc-Air Batteries. Angewandte Chemie - International Edition, 2020, 59, 286-294.	7.2	200
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1693	Porous transition metal phosphides derived from Fe-based Prussian blue analogue for oxygen evolution reaction. Journal of Alloys and Compounds, 2020, 814, 152332.	2.8	36
1694	B-doping-induced amorphization of LDH for large-current-density hydrogen evolution reaction. Applied Catalysis B: Environmental, 2020, 261, 118240.	10.8	191

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1696	Particulate Photocatalysts for Light-Driven Water Splitting: Mechanisms, Challenges, and Design Strategies. <i>Chemical Reviews</i> , 2020, 120, 919-985.	23.0	1,605
1697	FexNiyOOH/etched stainless steel mesh with different morphology for water electrolysis. <i>Ionics</i> , 2020, 26, 301-309.	1.2	7
1698	Self-supported Ni ₂ P nanosheets on low-cost three-dimensional Fe foam as a novel electrocatalyst for efficient water oxidation. <i>Journal of Energy Chemistry</i> , 2020, 42, 71-76.	7.1	44
1699	Charge Transfer Modulated Activity of Carbon-Based Electrocatalysts. <i>Advanced Energy Materials</i> , 2020, 10, 1901227.	10.2	156
1700	Boosting visible-light hydrogen evolution of covalent-organic frameworks by introducing Ni-based noble metal-free co-catalyst. <i>Chemical Engineering Journal</i> , 2020, 379, 122342.	6.6	117
1701	Tuning catalytic performance by controlling reconstruction process in operando condition. <i>Applied Catalysis B: Environmental</i> , 2020, 260, 118103.	10.8	68
1702	Nitrogen-doped carbon nanotube-graphene hybrid stabilizes M _x N (M = Fe, Co) nanoparticles for efficient oxygen reduction reaction. <i>Applied Catalysis B: Environmental</i> , 2020, 268, 118415.	10.8	46
1703	Structural instability-induced high-performance NiFe layered double hydroxides as oxygen evolution reaction catalysts for pH-near-neutral borate electrolyte: The role of intercalates. <i>Applied Catalysis B: Environmental</i> , 2020, 263, 118343.	10.8	39
1704	Large scale synthesis of Mo ₂ C nanoparticle incorporated carbon nanosheet (Mo ₂ C@C) for enhanced hydrogen evolution reaction. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 18623-18634.	3.8	30
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1708	Fabrication of a Hierarchical Ni(OH) ₂ @Ni ₃ S ₂ /Ni Foam Electrode from a Prussian Blue Analogue-Based Composite with Enhanced Electrochemical Capacitive and Electrocatalytic Properties. <i>Chemistry - A European Journal</i> , 2020, 26, 1111-1116.	1.7	6
1709	Porous organic polymer derived metal-free carbon composite as an electrocatalyst for CO ₂ reduction and water splitting. <i>Journal of the Taiwan Institute of Chemical Engineers</i> , 2020, 106, 183-190.	2.7	17
1710	In situ construction of hierarchical graphitic carbon nitride homojunction as robust bifunctional photoelectrocatalyst for overall water splitting. <i>Journal of Chemical Technology and Biotechnology</i> , 2020, 95, 758-769.	1.6	6
1711	Self-supported iron-doping NiSe ₂ nanowrinkles as bifunctional electrocatalysts for electrochemical water splitting. <i>Journal of Alloys and Compounds</i> , 2020, 818, 152833.	2.8	25
1712	Molybdenum-based nanoparticles (Mo ₂ C, MoP and MoS ₂) coupled heteroatoms-doped carbon nanosheets for efficient hydrogen evolution reaction. <i>Applied Catalysis B: Environmental</i> , 2020, 263, 118352.	10.8	124

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1717	Unpaired 3d Electrons on Atomically Dispersed Cobalt Centres in Coordination Polymers Regulate both Oxygen Reduction Reaction (ORR) Activity and Selectivity for Use in Zinc-Air Batteries. <i>Angewandte Chemie</i> , 2020, 132, 292-300.	1.6	21
1718	An Engineered Superhydrophilic/Superaerophobic Electrocatalyst Composed of the Supported CoMoS _x Chalcogel for Overall Water Splitting. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 1659-1665.	7.2	268
1719	Hierarchical porous bimetal-sulfide bi-functional nanocatalysts for hydrogen production by overall water electrolysis. <i>Journal of Colloid and Interface Science</i> , 2020, 560, 426-435.	5.0	38
1720	Recent Advances in Electrocatalytic Hydrogen Evolution Using Nanoparticles. <i>Chemical Reviews</i> , 2020, 120, 851-918.	23.0	1,767
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1724	Designing Atomic Active Centers for Hydrogen Evolution Electrocatalysts. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 20794-20812.	7.2	257
1725	Recent Advances on Black Phosphorus Based Electrocatalysts for Water-Splitting. <i>ChemCatChem</i> , 2020, 12, 1913-1921.	1.8	17
1726	Prussian blue analogues and their derived nanomaterials for electrocatalytic water splitting. <i>Coordination Chemistry Reviews</i> , 2020, 407, 213156.	9.5	167
1727	Enhanced charge transport in ReSe ₂ -based 2D/3D electrodes for efficient hydrogen evolution reaction. <i>Chemical Communications</i> , 2020, 56, 305-308.	2.2	11
1728	Computational screening of transition metal-doped phthalocyanine monolayers for oxygen evolution and reduction. <i>Nanoscale Advances</i> , 2020, 2, 710-716.	2.2	30
1729	Platinum nanoparticles on defect-rich nitrogen-doped hollow carbon as an efficient electrocatalyst for hydrogen evolution reactions. <i>RSC Advances</i> , 2020, 10, 930-937.	1.7	9
1730	An advanced and highly efficient Ce assisted NiFe-LDH electrocatalyst for overall water splitting. <i>Sustainable Energy and Fuels</i> , 2020, 4, 312-323.	2.5	125

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1732	Detecting structural transformation of cobalt phosphonate to active bifunctional catalysts for electrochemical water-splitting. <i>Journal of Materials Chemistry A</i> , 2020, 8, 2637-2643.	5.2	80
1733	Nanoconfined Synthesis of Nitrogen-Rich Metal-Free Mesoporous Carbon Nitride Electrocatalyst for the Oxygen Evolution Reaction. <i>ACS Applied Energy Materials</i> , 2020, 3, 1439-1447.	2.5	29
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1735	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 ² . <i>ACS Catalysis</i> , 2020, 10, 1886-1893.	5.5	91
1736	Au-Decorated CoOOH Nanoplate Hierarchical Hollow Structure for Plasmon-Enhanced Electrocatalytic Water Oxidation. <i>ACS Applied Energy Materials</i> , 2020, 3, 943-950.	2.5	16
1737	Hierarchically Constructed Silver Nanowire@Nickel-Iron Layered Double Hydroxide Nanostructures for Electrocatalytic Water Splitting. <i>ACS Applied Nano Materials</i> , 2020, 3, 887-895.	2.4	29
1738	Earth Abundant Electrocatalyst. , 2020, , 1-28.		0
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1741	Morphology control of metal-modified zirconium phosphate support structures for the oxygen evolution reaction. <i>Dalton Transactions</i> , 2020, 49, 3892-3900.	1.6	20
1742	Accelerative oxygen evolution by Cu-doping into Fe-Co oxides. <i>Sustainable Energy and Fuels</i> , 2020, 4, 143-148.	2.5	7
1743	Hierarchically Organized NiCo ₂ O ₄ Microflowers Anchored on Multiwalled Carbon Nanotubes: Efficient Bifunctional Electrocatalysts for Oxygen and Hydrogen Evolution Reactions. <i>ChemPlusChem</i> , 2020, 85, 183-194.	1.3	33
1744	Dopamine-assisted synthesis of rGO@NiPd@NC sandwich structure for highly efficient hydrogen evolution reaction. <i>Journal of Solid State Electrochemistry</i> , 2020, 24, 137-144.	1.2	5
1745	CuS@defect-rich MoS ₂ core-shell structure for enhanced hydrogen evolution. <i>Journal of Colloid and Interface Science</i> , 2020, 564, 77-87.	5.0	44
1746	Three-Dimensional N-Doped Carbon Nanotube Frameworks on Ni Foam Derived from a Metal-Organic Framework as a Bifunctional Electrocatalyst for Overall Water Splitting. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 3592-3602.	4.0	88
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1748	Boron-Induced Electronic Structure Reformation of CoP Nanoparticles Drives Enhanced pH-Universal Hydrogen Evolution. <i>Angewandte Chemie</i> , 2020, 132, 4183-4189.	1.6	23

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1754	Two-dimensional cobalt prussian blue nanosheets: Template-directed synthesis and electrocatalytic oxygen evolution property. <i>Electrochimica Acta</i> , 2020, 333, 135544.	2.6	12
1755	A Ni ₂ P nanocrystal cocatalyst enhanced TiO ₂ photoanode towards highly efficient photoelectrochemical water splitting. <i>Chemical Engineering Journal</i> , 2020, 385, 123878.	6.6	71
1756	Effect of Graphene Encapsulation of NiMo Alloys on Oxygen Evolution Reaction. <i>ACS Catalysis</i> , 2020, 10, 792-799.	5.5	60
1757	Porous Î²-Mo ₂ C nanoparticle clusters supported on walnut shell powders derived carbon matrix for hydrogen evolution reaction. <i>Journal of Colloid and Interface Science</i> , 2020, 563, 104-111.	5.0	28
1758	RuNi Nanoparticles Embedded in Nâ€Doped Carbon Nanofibers as a Robust Bifunctional Catalyst for Efficient Overall Water Splitting. <i>Advanced Science</i> , 2020, 7, 1901833.	5.6	152
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1760	A review on NiFe-based electro catalysts for efficient alkaline oxygen evolution reaction. <i>Journal of Power Sources</i> , 2020, 448, 227375.	4.0	217
1761	Encapsulating metal organic framework into hollow mesoporous carbon sphere as efficient oxygen bifunctional electro catalyst. <i>National Science Review</i> , 2020, 7, 609-619.	4.6	95
1762	Boosting the alkaline hydrogen evolution of Ru nanoclusters anchored on B/Nâ€doped graphene by accelerating water dissociation. <i>Nano Energy</i> , 2020, 68, 104301.	8.2	138
1763	Investigation of anion doping effect to boost overall water splitting. <i>Journal of Catalysis</i> , 2020, 381, 84-95.	3.1	25
1764	Nitrogen-doped graphene nanosheets supported assembled Pd nanoflowers for efficient ethanol electrooxidation. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 2020, 587, 124257.	2.3	9
1765	A multiphase nickel iron sulfide hybrid electrode for highly active oxygen evolution. <i>Science China Materials</i> , 2020, 63, 356-363.	3.5	23
1766	3D Nitrogenâ€Doped Graphene Encapsulated Metallic Nickelâ€Iron Alloy Nanoparticles for Efficient Bifunctional Oxygen Electro catalysis. <i>Chemistry - A European Journal</i> , 2020, 26, 4044-4051.	1.7	25

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1770	Strain stabilized nickel hydroxide nanoribbons for efficient water splitting. Energy and Environmental Science, 2020, 13, 229-237.	15.6	78
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1772	Co ₉ S ₈ integrated into nitrogen/sulfur dual-doped carbon nanofibers as an efficient oxygen bifunctional electrocatalyst for Zn-air batteries. Sustainable Energy and Fuels, 2020, 4, 1093-1098.	2.5	15
1773	Metal-organic frameworks and their derivatives with graphene composites: preparation and applications in electrocatalysis and photocatalysis. Journal of Materials Chemistry A, 2020, 8, 2934-2961.	5.2	170
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1775	Recent progress of MXenes as the support of catalysts for the CO oxidation and oxygen reduction reaction. Chinese Chemical Letters, 2020, 31, 931-936.	4.8	32
1776	Earth-abundant transition-metal-based bifunctional catalysts for overall electrochemical water splitting: A review. Journal of Alloys and Compounds, 2020, 819, 153346.	2.8	253
1777	Amorphous Intermediate Derivative from ZIF-67 and Its Outstanding Electrocatalytic Activity. Small, 2020, 16, e1904252.	5.2	120
1778	Three-Dimensional Heterostructured NiCoP@NiMn-Layered Double Hydroxide Arrays Supported on Ni Foam as a Bifunctional Electrocatalyst for Overall Water Splitting. ACS Applied Materials & Interfaces, 2020, 12, 4385-4395.	4.0	117
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1781	Double Metal Diphosphide Pair Nanocages Coupled with P-Doped Carbon for Accelerated Oxygen and Hydrogen Evolution Kinetics. ACS Applied Materials & Interfaces, 2020, 12, 727-733.	4.0	93
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1783	Amorphous MoS ₂ coated Ni ₃ S ₂ nanosheets as bifunctional electrocatalysts for high-efficiency overall water splitting. Electrochimica Acta, 2020, 332, 135454.	2.6	65
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1786	Atomically Dispersed Mo Supported on Metallic Co ₉ S ₈ Nanoflakes as an Advanced Noble–Metal–Free Bifunctional Water Splitting Catalyst Working in Universal pH Conditions. <i>Advanced Energy Materials</i> , 2020, 10, 1903137.	10.2	162
1787	Efficient hydrogen production via urea electrolysis with cobalt doped nickel hydroxide-riched hybrid films: Cobalt doping effect and mechanism aspect. <i>Journal of Catalysis</i> , 2020, 381, 454-461.	3.1	62
1788	Self-Supported Iridium Oxide Nanostructures for Electrocatalytic Water Oxidation in Acidic Media. <i>Journal of Physical Chemistry C</i> , 2020, 124, 2-8.	1.5	24
1789	Si-Based Water Oxidation Photoanodes Conjugated with Earth-Abundant Transition Metal-Based Catalysts. , 2020, 2, 107-126.		35
1790	Tailoring the thickness of MoSe ₂ layer of the hierarchical double-shelled N-doped carbon@MoSe ₂ hollow nanoboxes for efficient and stable hydrogen evolution reaction. <i>Journal of Catalysis</i> , 2020, 381, 363-373.	3.1	49
1791	Nitrogen-coordinated metallic cobalt disulfide self-encapsulated in graphitic carbon for electrochemical water oxidation. <i>Applied Catalysis B: Environmental</i> , 2020, 268, 118449.	10.8	44
1792	Investigating affordable cobalt based metallosurfactant as an efficient electrocatalyst for hydrogen evolution reaction. <i>Journal of Colloid and Interface Science</i> , 2020, 562, 598-607.	5.0	23
1793	Surface Activation and Reconstruction of Non-Oxide-Based Catalysts Through in Situ Electrochemical Tuning for Oxygen Evolution Reactions in Alkaline Media. <i>ACS Catalysis</i> , 2020, 10, 463-493.	5.5	196
1794	Iron oxide@graphitic carbon core-shell nanoparticles embedded in ordered mesoporous N-doped carbon matrix as an efficient cathode catalyst for PEMFC. <i>Applied Catalysis B: Environmental</i> , 2020, 264, 118468.	10.8	59
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1796	Guarding active sites and electron transfer engineering of core-shell nanosheet as robust bifunctional applications for overall water splitting and capacitors. <i>Electrochimica Acta</i> , 2020, 331, 135372.	2.6	3
1797	Facile preparation of N, P co-doped molybdenum carbide / porous carbon rough microspheres for efficient electrocatalytic hydrogen evolution. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 595-604.	3.8	22
1798	Graphitic–Shell Encapsulation of Metal Electrocatalysts for Oxygen Evolution, Oxygen Reduction, and Hydrogen Evolution in Alkaline Solution. <i>Advanced Energy Materials</i> , 2020, 10, 1903215.	10.2	138
1799	Regulating the Spin State of Fe ^{III} by Atomically Anchoring on Ultrathin Titanium Dioxide for Efficient Oxygen Evolution Electrocatalysis. <i>Angewandte Chemie</i> , 2020, 132, 2333-2337.	1.6	24
1800	Monomeric MoS ₄ ²⁻ -Derived Polymeric Chains with Active Molecular Units for Efficient Hydrogen Evolution Reaction. <i>ACS Catalysis</i> , 2020, 10, 652-662.	5.5	37
1801	Vertically aligned NiS ₂ /CoS ₂ /MoS ₂ nanosheet array as an efficient and low-cost electrocatalyst for hydrogen evolution reaction in alkaline media. <i>Science Bulletin</i> , 2020, 65, 359-366.	4.3	45
1802	3D Carbon Materials for Efficient Oxygen and Hydrogen Electrocatalysis. <i>Advanced Energy Materials</i> , 2020, 10, 1902494.	10.2	97

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1805	Cobalt-gluconate-derived high-density cobalt sulfides nanocrystals encapsulated within nitrogen and sulfur dual-doped micro/mesoporous carbon spheres for efficient electrocatalysis of oxygen reduction. Journal of Colloid and Interface Science, 2020, 561, 829-837.	5.0	31
1806	Hollow carbon spheres codoped with nitrogen and iron as effective electrocatalysts for oxygen reduction reaction. Journal of Power Sources, 2020, 450, 227659.	4.0	30
1807	Phosphomolybdic Acid as a Catalyst for Oxidative Valorization of Biomass and Its Application as an Alternative Electron Source. ACS Catalysis, 2020, 10, 2060-2068.	5.5	33
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1810	Silicon Photoanode Modified with Workfunction-tuned Ni _{1-y} Ni _{1+y} OH ₂ Core-shell Particles for Water Oxidation. ChemSusChem, 2020, 13, 6037-6044.	3.6	11
1811	Boosting the electrochemical performance of mesoporous NiCo ₂ O ₄ oxygen evolution catalysts by facile surface modifying. Applied Physics A: Materials Science and Processing, 2020, 126, 1.	1.1	5
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1820	Controllable Heteroatom Doping Effects of Cr _x Co _{2-x} P Nanoparticles: a Robust Electrocatalyst for Overall Water Splitting in Alkaline Solutions. ACS Applied Materials & Interfaces, 2020, 12, 47397-47407.	4.0	39

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1823	One stable electrocatalyst for two evolution reactions by one-pot combustion synthesis. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 22691-22699.	3.8	8
1824	A highly efficient photocatalytic methanol fuel cell based on non-noble metal photoelectrodes: Study on its energy band engineering via experimental and density functional theory method. <i>Journal of Power Sources</i> , 2020, 478, 228756.	4.0	19
1825	Precise Synthesis of Fe-N ₂ Sites with High Activity and Stability for Long-Life Lithium-Sulfur Batteries. <i>ACS Nano</i> , 2020, 14, 16105-16113.	7.3	120
1826	Carbon supported noble metal nanoparticles as efficient catalysts for electrochemical water splitting. <i>Nanoscale</i> , 2020, 12, 20165-20170.	2.8	34
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1831	Visible-Light-Driven Electrocatalytic Oxygen Evolution Reaction: NiFe ₂ O ₄ /NiFe Layered Double Hydroxide Z-Scheme Heteronanoshheet as a Model. <i>Energy Technology</i> , 2020, 8, 2000607.	1.8	6
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1838	Sol-gel Synthesis of Ce _{0.8} Sr _{0.2} Co _{1-(x+y)} Ni _x Fe _y O _{3-$\hat{\gamma}$} (\hat{x} =0.1, 0.2, and \hat{y} =0.2, 0.5, 0.7) a Nanocomposite-Type Electrocatalyst for the Oxygen Evolution Reaction in Alkaline Media. <i>Electrocatalysis</i> , 2020, 11, 628-641.	1.5	0

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1845	Unusual doping induced phase transitions in NiS <i>via</i> solventless synthesis enabling superior bifunctional electrocatalytic activity. <i>Sustainable Energy and Fuels</i> , 2020, 4, 5132-5143.	2.5	18
1846	General Synthesis of Single-Atom Catalysts for Hydrogen Evolution Reactions and Room-Temperature Na ⁺ S Batteries. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 22171-22178.	7.2	80
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1849	Identifying the Active Sites of a Single Atom Catalyst with pH-Universal Oxygen Reduction Reaction Activity. <i>Cell Reports Physical Science</i> , 2020, 1, 100115.	2.8	26
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1859	Single-Crystalline Mo-Nanowire-Mediated Directional Growth of High-Index-Faceted MoNi Electrocatalyst for Ultralong-Term Alkaline Hydrogen Evolution. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 36259-36267.	4.0	18
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1864	Trends in Alkaline Hydrogen Evolution Activity on Cobalt Phosphide Electrocatalysts Doped with Transition Metals. <i>Cell Reports Physical Science</i> , 2020, 1, 100136.	2.8	46
1865	Two-dimensional Noble Metal Nanomaterials for Electrocatalysis. <i>Chemical Research in Chinese Universities</i> , 2020, 36, 597-610.	1.3	11
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1867	Interfacing metals and compounds for enhanced hydrogen evolution from water splitting. <i>MRS Bulletin</i> , 2020, 45, 548-554.	1.7	1
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1898	Atomically deviated Pd-Te nanoplates boost methanol-tolerant fuel cells. <i>Science Advances</i> , 2020, 6, eaba9731.	4.7	78
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1903	Platinum Single Atoms Supported on Nanoarray-Structured Nitrogen-Doped Graphite Foil with Enhanced Catalytic Performance for Hydrogen Evolution Reaction. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 38106-38112.	4.0	24
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1906	Ru-Doping Enhanced Electrocatalysis of Metal-Organic Framework Nanosheets toward Overall Water Splitting. <i>Chemistry - A European Journal</i> , 2020, 26, 17091-17096.	1.7	51
1907	Fast Method for Calculating Spatially Resolved Heterogeneous Electron-Transfer Kinetics and Its Application to Graphene with Defects. <i>Journal of Physical Chemistry C</i> , 2020, 124, 18147-18155.	1.5	10
1908	Active Sites of Single-Atom Iron Catalyst for Electrochemical Hydrogen Evolution. <i>Journal of Physical Chemistry Letters</i> , 2020, 11, 6691-6696.	2.1	37
1909	Highly Efficient Synthesis of Carbon-Based Molybdenum Phosphide Nanoparticles for Electrocatalytic Hydrogen Evolution. <i>Nanoscale Research Letters</i> , 2020, 15, 6.	3.1	12
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1913	General Synthesis of Single-Atom Catalysts for Hydrogen Evolution Reactions and Room-Temperature Na ₂ S Batteries. Angewandte Chemie, 2020, 132, 22355-22362.	1.6	62
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1949	Adatom Doping of Transition Metals in ReSe ₂ Nanosheets for Enhanced Electrocatalytic Hydrogen Evolution Reaction. <i>ACS Nano</i> , 2020, 14, 12184-12194.	7.3	67
1950	Recent Advances in Earth-Abundant Core/Noble-Metal Shell Nanoparticles for Electrocatalysis. <i>ACS Catalysis</i> , 2020, 10, 10886-10904.	5.5	38
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1953	Recent Progress, Challenges, and Prospects in Two-Dimensional Photo-Catalyst Materials and Environmental Remediation. <i>Nano-Micro Letters</i> , 2020, 12, 167.	14.4	57
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1955	Exploring the oxygen electrode bi-functional activity of Ni-C-doped graphene systems with N, C co-ordination and OH ligand effects. <i>Journal of Materials Chemistry A</i> , 2020, 8, 20453-20462.	5.2	49
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1957	Nickel-doped pyrrhotite iron sulfide nanosheets as a highly efficient electrocatalyst for water splitting. <i>Journal of Materials Chemistry A</i> , 2020, 8, 20323-20330.	5.2	55
1958	Selective Surface Reconstruction of a Defective Iridium-Based Catalyst for High-Efficiency Water Splitting. <i>Advanced Functional Materials</i> , 2020, 30, 2004375.	7.8	85
1959	Transition-Metal Phosphides: Activity Origin, Energy-Related Electrocatalysis Applications, and Synthetic Strategies. <i>Advanced Functional Materials</i> , 2020, 30, 2004009.	7.8	309
1960	Ultralow Pt ⁰ loading on MIL-88A(Fe) derived polyoxometalate-Fe ₃ O ₄ @C micro-rods with highly-efficient electrocatalytic hydrogen evolution. <i>Journal of Coordination Chemistry</i> , 2020, 73, 2422-2436.	0.8	2
1961	Density Functional Theory Study on the Hydrogen Evolution Reaction in the S-rich SnS ₂ Nanosheets. <i>Electrocatalysis</i> , 2020, 11, 604-611.	1.5	17
1962	Hollow waxberry-like cobalt-nickel oxide/S,N-codoped carbon nanospheres as a trifunctional electrocatalyst for OER, ORR, and HER. <i>RSC Advances</i> , 2020, 10, 27788-27793.	1.7	17
1963	Recent Advances in Bipolar Membrane Design and Applications. <i>Chemistry of Materials</i> , 2020, 32, 8060-8090.	3.2	96
1964	Charge reactions on crystalline/amorphous lanthanum nickel oxide cocatalyst modified hematite photoanode. <i>Journal of Chemical Physics</i> , 2020, 153, 024701.	1.2	3

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1966	Revitalizing degraded solid oxide fuel cells in sour fuels for bifunctional oxygen catalysis in zinc-air batteries. <i>Green Chemistry</i> , 2020, 22, 6075-6083.	4.6	9
1967	N-Doped carbon nanospheres with nanocavities to encapsulate manganese oxides as ORR electrocatalysts. <i>New Journal of Chemistry</i> , 2020, 44, 14915-14921.	1.4	7
1968	Recent Electrochemical Applications of Metal-Organic Framework-Based Materials. <i>Crystal Growth and Design</i> , 2020, 20, 7034-7064.	1.4	112
1969	Basal plane activation in monolayer MoTe ₂ for the hydrogen evolution reaction via phase boundaries. <i>Journal of Materials Chemistry A</i> , 2020, 8, 19522-19532.	5.2	19
1970	Disperse Multimetal Atom-Doped Carbon as Efficient Bifunctional Electrocatalysts for Oxygen Reduction and Evolution Reactions: Design Strategies. <i>Journal of Physical Chemistry C</i> , 2020, 124, 27387-27395.	1.5	16
1971	A supramolecular-confinement pyrolysis route to ultrasmall rhodium phosphide nanoparticles as a robust electrocatalyst for hydrogen evolution in the entire pH range and seawater electrolysis. <i>Journal of Materials Chemistry A</i> , 2020, 8, 25768-25779.	5.2	22
1972	Metal-Carbon Composite Catalysts by One-Step Conversion of MOF Crystals in a Sealed-Tube Reactor. <i>ACS Applied Energy Materials</i> , 2020, 3, 11529-11533.	2.5	3
1973	Ru/RuO ₂ Nanoparticle Composites with N-Doped Reduced Graphene Oxide as Electrocatalysts for Hydrogen and Oxygen Evolution. <i>ACS Applied Nano Materials</i> , 2020, 3, 12269-12277.	2.4	68
1974	Complex Catalytic Materials Based on the Perovskite-Type Structure for Energy and Environmental Applications. <i>Materials</i> , 2020, 13, 5555.	1.3	10
1975	Ultrafast formation of an FeOOH electrocatalyst on Ni for efficient alkaline water and urea oxidation. <i>Chemical Communications</i> , 2020, 56, 14713-14716.	2.2	65
1976	Efficient Machine-Learning-Aided Screening of Hydrogen Adsorption on Bimetallic Nanoclusters. <i>ACS Combinatorial Science</i> , 2020, 22, 768-781.	3.8	15
1977	Cu-Fe-NH ₂ based metal-organic framework nanosheets via drop-casting for highly efficient oxygen evolution catalysts durable at ultrahigh currents. <i>Journal of Materials Chemistry A</i> , 2020, 8, 24408-24418.	5.2	95
1978	Numerical Deconvolution of Surface Interrogation Scanning Electrochemical Microscopy Experiments on Platinum During Hydrogen Evolution. <i>ChemElectroChem</i> , 2020, 7, 4863-4872.	1.7	5
1979	Hierarchical Microspheres Composed of Mn-Doped CoP Nanosheets for Enhanced Oxygen Evolution. <i>ACS Applied Nano Materials</i> , 2020, 3, 10702-10707.	2.4	16
1980	An Electrocatalytically Active Nanoflake-Like Co ₉ S ₈ -CoSe ₂ Heterostructure for Overall Water Splitting. <i>ACS Applied Nano Materials</i> , 2020, 3, 11326-11334.	2.4	60
1981	Complete Reconstruction of Hydrate Pre-Catalysts for Ultrastable Water Electrolysis in Industrial-Concentration Alkali Media. <i>Cell Reports Physical Science</i> , 2020, 1, 100241.	2.8	117
1982	A Superaerophobic Bimetallic Selenides Heterostructure for Efficient Industrial-Level Oxygen Evolution at Ultra-High Current Densities. <i>Nano-Micro Letters</i> , 2020, 12, 104.	14.4	99

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1984	Hierarchical Nanoflower Arrays of Co ₉ S ₈ ~Ni ₃ S ₂ on Nickel Foam: A~Highly Efficient Binder~Free Electrocatalyst for Overall Water Splitting. Chemistry - A European Journal, 2020, 26, 7900-7911.	1.7	22
1985	Incorporation of CuO/TiO ₂ Nanocomposite into MOF-5 for Enhanced Oxygen Evolution Reaction (OER) and Photodegradation of Organic Dyes. Journal of Inorganic and Organometallic Polymers and Materials, 2020, 30, 4043-4052.	1.9	13
1986	Antibuoyancy and Unidirectional Gas Evolution by Janus Electrodes with Asymmetric Wettability. ACS Applied Materials & Interfaces, 2020, 12, 23627-23634.	4.0	29
1987	Sulfur vacancies promoting Fe-doped Ni ₃ S ₂ nanopyramid arrays as efficient bifunctional electrocatalysts for overall water splitting. Sustainable Energy and Fuels, 2020, 4, 3326-3333.	2.5	44
1988	Current Trends in MXene-Based Nanomaterials for Energy Storage and Conversion System: A Mini Review. Catalysts, 2020, 10, 495.	1.6	89
1989	Molybdenum Carbide~Embedded Multichannel Hollow Carbon Nanofibers as Bifunctional Catalysts for Water Splitting. Chemistry - an Asian Journal, 2020, 15, 1957-1962.	1.7	7
1990	Bulk COFs and COF nanosheets for electrochemical energy storage and conversion. Chemical Society Reviews, 2020, 49, 3565-3604.	18.7	617
1991	Robust Interface Ru Centers for High~Performance Acidic Oxygen Evolution. Advanced Materials, 2020, 32, e1908126.	11.1	145
1992	Stable Rhodium (IV) Oxide for Alkaline Hydrogen Evolution Reaction. Advanced Materials, 2020, 32, e1908521.	11.1	115
1993	Iron-doped NiSe ₂ in-situ grown on graphene as an efficient electrocatalyst for oxygen evolution reaction. Journal of Electroanalytical Chemistry, 2020, 866, 114134.	1.9	19
1994	Nitrogen-Doped Porous Carbon Material Derived from Biomass of Beancurd as an Efficient Electrocatalyst for Oxygen Reduction and Zn-air Fuel Cell. Journal of the Electrochemical Society, 2020, 167, 084516.	1.3	22
1995	Recent Progress in Low Pt Content Electrocatalysts for Hydrogen Evolution Reaction. Advanced Materials Interfaces, 2020, 7, 2000396.	1.9	84
1996	A Physical Model for Understanding the Activation of MoS ₂ Basal~Plane Sulfur Atoms for the Hydrogen Evolution Reaction. Angewandte Chemie - International Edition, 2020, 59, 14835-14841.	7.2	36
1997	Removing the barrier to water dissociation on single-atom Pt sites decorated with a CoP mesoporous nanosheet array to achieve improved hydrogen evolution. Journal of Materials Chemistry A, 2020, 8, 11246-11254.	5.2	62
1998	Robust InNCo ₃ ~Mn~Nitride-Supported Pt Nanoparticles as High-Performance Bifunctional Electrocatalysts for Zn~Air Batteries. ACS Applied Energy Materials, 2020, 3, 5293-5300.	2.5	13
1999	Synthesis of Co-based Prussian Blue Analogues/Dual-Doped Hollow Carbon Microsphere Hybrids as High-Performance Bifunctional Electrocatalysts for Oxygen Evolution and Overall Water Splitting. ACS Sustainable Chemistry and Engineering, 2020, 8, 8318-8326.	3.2	45
2000	Advancement of Platinum (Pt)-Free (Non-Pt Precious Metals) and/or Metal-Free (Non-Precious-Metals) Electrocatalysts in Energy Applications: A Review and Perspectives. Energy & Fuels, 2020, 34, 6634-6695.	2.5	100

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2002	Elucidation of Active Sites on S, N Codoped Carbon Cubes Embedding Co-Fe Carbides toward Reversible Oxygen Conversion in High-Performance Zinc-Air Batteries. <i>Small</i> , 2020, 16, e1907368.	5.2	66
2003	Implanting Isolated Ru Atoms into Edge-Rich Carbon Matrix for Efficient Electrocatalytic Hydrogen Evolution. <i>Advanced Energy Materials</i> , 2020, 10, 2000882.	10.2	144
2004	Appropriate Use of Electrochemical Impedance Spectroscopy in Water Splitting Electrocatalysis. <i>ChemElectroChem</i> , 2020, 7, 2297-2308.	1.7	154
2005	Implanting Ni-O-VO _x sites into Cu-doped Ni for low-overpotential alkaline hydrogen evolution. <i>Nature Communications</i> , 2020, 11, 2720.	5.8	113
2006	Catalytic activity atlas of ternary Co-Fe-V metal oxides for the oxygen evolution reaction. <i>Journal of Materials Chemistry A</i> , 2020, 8, 15951-15961.	5.2	43
2007	Ultralow-temperature assisted synthesis of single platinum atoms anchored on carbon nanotubes for efficiently electrocatalytic acidic hydrogen evolution. <i>Journal of Energy Chemistry</i> , 2020, 51, 280-284.	7.1	84
2008	High-performance Ni-V-Fe metal-organic framework electrocatalyst composed of integrated nanowires and nanosheets for oxygen evolution reaction. <i>Materials Today Energy</i> , 2020, 16, 100419.	2.5	14
2009	Cr _{1-x} Mo _x B ₂ Solid Solution: Overpowering Pt/C at High Current Density. <i>Advanced Materials</i> , 2020, 32, e2000855.	11.1	61
2010	Boosting oxygen evolution reaction performance by nickel substituted cobalt-iron oxide nanoparticles embedded over reduced graphene oxide. <i>Materials Chemistry and Physics</i> , 2020, 252, 123238.	2.0	10
2011	3D freestanding flower-like nickel-cobalt layered double hydroxides enriched with oxygen vacancies as efficient electrocatalysts for water oxidation. <i>Sustainable Materials and Technologies</i> , 2020, 25, e00170.	1.7	8
2012	Enhanced Oxygen Evolution Reaction Activity of a Co ₂ P@NC-Fe ₂ P Composite Boosted by Interfaces Between a N-Doped Carbon Matrix and Fe ₂ P Microspheres. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 25884-25894.	4.0	61
2013	Beneficial restacking of 2D nanomaterials for electrocatalysis: a case of MoS ₂ membranes. <i>Chemical Communications</i> , 2020, 56, 7005-7008.	2.2	20
2014	Inductive effect between atomically dispersed iridium and transition-metal hydroxide nanosheets enables highly efficient oxygen evolution reaction. <i>Chemical Engineering Journal</i> , 2020, 395, 125149.	6.6	53
2015	Proton exchange membrane with plasmon-active surface for enhancement of fuel cell effectivity. <i>Nanoscale</i> , 2020, 12, 12068-12075.	2.8	4
2016	Recent progress in transition metal selenide electrocatalysts for water splitting. <i>Nanoscale</i> , 2020, 12, 12249-12262.	2.8	202
2017	Robust ruthenium diphosphide nanoparticles for pH-universal hydrogen evolution reaction with platinum-like activity. <i>Applied Catalysis B: Environmental</i> , 2020, 274, 119092.	10.8	69
2018	Integrating H ₂ generation with sewage disposal by an efficient anti-poisoning bifunctional electrocatalyst. <i>Applied Catalysis B: Environmental</i> , 2020, 277, 119175.	10.8	18

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2020	Strained heterointerfaces in sandwich-like NiFe layered double hydroxides/Co _{1-x} S for highly efficient and superior long-term durable oxygen evolution reaction. Journal of Catalysis, 2020, 389, 132-139.	3.1	32
2021	Tuning Single-Atom Catalysts of Nitrogen-Coordinated Transition Metals for Optimizing Oxygen Evolution and Reduction Reactions. Journal of Physical Chemistry C, 2020, 124, 13168-13176.	1.5	43
2022	Fluorine-Induced Dual Defects in Cobalt Phosphide Nanosheets Enhance Hydrogen Evolution Reaction Activity. , 2020, 2, 736-743.		81
2023	Performance enhancement of oxygen evolution reaction through incorporating bimetallic electrocatalysts in two-dimensional metal-organic frameworks. Catalysis Science and Technology, 2020, 10, 3897-3903.	2.1	34
2024	Ir Cluster-Decorated Carbon Composite as Bifunctional Electrocatalysts for Acidic Stable Overall Water Splitting. Journal of the Electrochemical Society, 2020, 167, 104511.	1.3	18
2025	Sustainable Catalytic Processes Driven by Graphene-Based Materials. Processes, 2020, 8, 672.	1.3	8
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2027	Two-dimensional electrocatalysts for alcohol oxidation: A critical review. Chemical Engineering Journal, 2020, 400, 125744.	6.6	67
2028	CoNiSe ₂ Nanostructures for Clean Energy Production. ACS Omega, 2020, 5, 14702-14710.	1.6	27
2029	Transition metal-doped $\sqrt{3}$ -borophene as potential oxygen and hydrogen evolution electrocatalyst: A density functional theory study. Catalysis Communications, 2020, 144, 106090.	1.6	20
2030	Mesoporous anion-cation-codoped Co ₉ S ₈ nanorings for enhanced electrocatalytic oxygen evolution reactions. Nanotechnology, 2020, 31, 334001.	1.3	6
2031	Enabling Iron-Based Highly Effective Electrochemical Water-Splitting and Selective Oxygenation of Organic Substrates through In Situ Surface Modification of Intermetallic Iron Stannide Precatalyst. Advanced Energy Materials, 2020, 10, 2001377.	10.2	96
2032	Cobalt-stabilized oxygen vacancy of V ₂ O ₅ nanosheet arrays with delocalized valence electron for alkaline water splitting. Chemical Engineering Science, 2020, 227, 115915.	1.9	26
2033	Solvothermal synthesis of oxygen-incorporated MoS _{2-x} nanosheets with abundant undercoordinated Mo for efficient hydrogen evolution. International Journal of Hydrogen Energy, 2020, 45, 19133-19143.	3.8	24
2034	First-Principles Study on Chromium-Substituted $\sqrt{3}$ -Cobalt Oxyhydroxides for Efficient Oxygen Evolution Reaction. ACS Applied Energy Materials, 2020, 3, 6486-6491.	2.5	9
2035	Defect-engineered CoMoO ₄ ultrathin nanosheet array and promoted urea oxidation reaction. Applied Catalysis A: General, 2020, 602, 117670.	2.2	32
2036	Interface Catalysts of Ni/Co ₂ N for Hydrogen Electrochemistry. ACS Applied Materials & Interfaces, 2020, 12, 29357-29364.	4.0	8

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2038	Boosting the Oxygen Evolution Electrocatalysis Performance of Iron Phosphide via Architectural Design and Electronic Modulation. <i>ACS Sustainable Chemistry and Engineering</i> , 2020, 8, 9206-9216.	3.2	15
2039	First-principle calculations on the structure, electronic property and catalytic activity for hydrogen evolution reaction of 2D transition-metal borides. <i>Materials Chemistry and Physics</i> , 2020, 253, 123334.	2.0	21
2040	Transition-metal-based electrocatalysts for hydrazine-assisted hydrogen production. <i>Materials Today Advances</i> , 2020, 7, 100083.	2.5	29
2041	Core-Shell Dendritic Superstructural Catalysts by Design for Highly Efficient and Stable Electrochemical Oxygen Evolution Reaction. <i>Advanced Materials Interfaces</i> , 2020, 7, 2000777.	1.9	8
2042	CO ₂ electrochemical reduction using single-atom catalysts. Preparation, characterization and anchoring strategies: a review. <i>Environmental Chemistry Letters</i> , 2020, 18, 1593-1623.	8.3	19
2043	Synthesis, properties and novel electrocatalytic applications of the 2D-borophene Xenes. <i>Progress in Solid State Chemistry</i> , 2020, 59, 100283.	3.9	65
2044	Ethylene Selectivity in Electrocatalytic CO ₂ Reduction on Cu Nanomaterials: A Crystal Phase-Dependent Study. <i>Journal of the American Chemical Society</i> , 2020, 142, 12760-12766.	6.6	183
2045	Highly enhanced bifunctional electrocatalytic activity of mixed copper-copper oxides on nickel foam via composition control. <i>New Journal of Chemistry</i> , 2020, 44, 11993-12001.	1.4	14
2046	Atomically dispersed catalysts for hydrogen/oxygen evolution reactions and overall water splitting. <i>Journal of Power Sources</i> , 2020, 471, 228446.	4.0	74
2047	Compositional engineering of sulfides, phosphides, carbides, nitrides, oxides, and hydroxides for water splitting. <i>Journal of Materials Chemistry A</i> , 2020, 8, 13415-13436.	5.2	124
2048	Functional Role of Fe, Cu-Doping in Ni-Based Perovskite Electrocatalysts for Oxygen Evolution Reaction. <i>Nano</i> , 2020, 15, 2050077.	0.5	5
2049	A Physical Model for Understanding the Activation of MoS ₂ Basal Plane Sulfur Atoms for the Hydrogen Evolution Reaction. <i>Angewandte Chemie</i> , 2020, 132, 14945-14951.	1.6	9
2050	Single-Atom Catalysts for Electrocatalytic Applications. <i>Advanced Functional Materials</i> , 2020, 30, 2000768.	7.8	390
2051	A zeolite-type CoFe selenite via in-situ transformation of layered double hydroxide boosting the water oxidation performance in alkaline electrolyte. <i>Chemical Engineering Journal</i> , 2020, 399, 125799.	6.6	14
2052	Porous Carbon Membrane-Supported Atomically Dispersed Pyrrole-Type Fe ₃ N ₄ as Active Sites for Electrochemical Hydrazine Oxidation Reaction. <i>Small</i> , 2020, 16, e2002203.	5.2	34
2053	Spontaneously separated intermetallic Co ₃ Mo from nanoporous copper as versatile electrocatalysts for highly efficient water splitting. <i>Nature Communications</i> , 2020, 11, 2940.	5.8	146
2054	Dynamically controlled growth of Cu-Mo-O nanosheets for efficient electrocatalytic hydrogen evolution. <i>Journal of Materials Chemistry C</i> , 2020, 8, 9337-9344.	2.7	3

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2056	Ni- and Co-Substituted Metallic MoS ₂ for the Alkaline Hydrogen Evolution Reaction. <i>ChemElectroChem</i> , 2020, 7, 3606-3615.	1.7	24
2057	Nanostructured materials for photocatalytic energy conversion. , 2020, , 325-343.		2
2058	Atomic Layer Deposition-Assisted Fabrication of Co-Nanoparticle/N-Doped Carbon Nanotube Hybrids as Efficient Electrocatalysts for the Oxygen Evolution Reaction. <i>Small</i> , 2020, 16, e2002427.	5.2	51
2059	Confining Iron Carbide Growth in Porous Carbon to Improve the Electrocatalytic Performance for Oxygen Reduction Reaction. <i>Electrocatalysis</i> , 2020, 11, 354-363.	1.5	2
2060	Trace tungsten and iron-doped nickel hydroxide nanosheets for an efficient oxygen evolution reaction. <i>Sustainable Energy and Fuels</i> , 2020, 4, 2792-2799.	2.5	8
2061	High throughput screening of M ₃ C ₂ MXenes for efficient CO ₂ reduction conversion into hydrocarbon fuels. <i>Nanoscale</i> , 2020, 12, 7660-7673.	2.8	64
2062	Heterostructured CoP/MoO ₂ on Mo foil as high-efficiency electrocatalysts for the hydrogen evolution reaction in both acidic and alkaline media. <i>Journal of Materials Chemistry A</i> , 2020, 8, 6732-6739.	5.2	58
2063	Self-Supported Composite of (Ni,Co) ₃ C Mesoporous Nanosheets/N-Doped Carbon as a Flexible Electrocatalyst for pH-Universal Hydrogen Evolution. <i>ACS Sustainable Chemistry and Engineering</i> , 2020, 8, 5287-5295.	3.2	36
2064	Fabrication of Silica/Sulfur@Polyaniline Spheres with Radial Mesochannels as Enhanced Cathode Materials for High-Performance Lithium-Sulfur Batteries. <i>ChemNanoMat</i> , 2020, 6, 827-836.	1.5	2
2065	Flower-like carbon doped MoS ₂ /Activated carbon composite electrode for superior performance of supercapacitors and hydrogen evolution reactions. <i>Journal of Alloys and Compounds</i> , 2020, 831, 154745.	2.8	25
2066	Two-dimensional metal-organic framework nanosheets: synthetic methodologies and electrocatalytic applications. <i>Journal of Materials Chemistry A</i> , 2020, 8, 15271-15301.	5.2	79
2067	Engineering Lithium Ions Embedded in NiFe Layered Double Hydroxide Lattices To Activate Laminated Ni ²⁺ Sites as High-Efficiency Oxygen Evolution Reaction Catalysts. <i>Chemistry - A European Journal</i> , 2020, 26, 7244-7249.	1.7	25
2068	The role of oxygen vacancies of ABO ₃ perovskite oxides in the oxygen reduction reaction. <i>Energy and Environmental Science</i> , 2020, 13, 1408-1428.	15.6	477
2069	Surface Modification for Promoting Durable, Efficient, and Selective Electrocatalysts. <i>ChemElectroChem</i> , 2020, 7, 2345-2363.	1.7	26
2070	Two-dimensional metal oxide nanomaterials for sustainable energy applications. , 2020, , 39-72.		3
2071	Electrospinning synthesis of transition metal alloy nanoparticles encapsulated in nitrogen-doped carbon layers as an advanced bifunctional oxygen electrode. <i>Journal of Materials Chemistry A</i> , 2020, 8, 7245-7252.	5.2	66
2072	A simple strategy for tridoped porous carbon nanosheet as superior electrocatalyst for bifunctional oxygen reduction and hydrogen evolution reactions. <i>Carbon</i> , 2020, 162, 586-594.	5.4	55

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2074	Recent Modification Strategies of MoS ₂ for Enhanced Electrocatalytic Hydrogen Evolution. Molecules, 2020, 25, 1136.	1.7	44
2075	Ruthenium Nanoparticles on Cobalt-Doped 1Tâ€² Phase MoS ₂ Nanosheets for Overall Water Splitting. Small, 2020, 16, e2000081.	5.2	82
2076	Ruthenium anchored on carbon nanotube electrocatalyst for hydrogen production with enhanced Faradaic efficiency. Nature Communications, 2020, 11, 1278.	5.8	340
2077	Rational Design of a N,S Co-Doped Supermicroporous CoFe-Organic Framework Platform for Water Oxidation. ChemSusChem, 2020, 13, 2564-2570.	3.6	29
2078	Transition Metal Phosphide-Based Materials for Efficient Electrochemical Hydrogen Evolution: A Critical Review. ChemSusChem, 2020, 13, 3357-3375.	3.6	218
2079	Crystalline Copper Selenide as a Reliable Non-Noble Electro(pre)catalyst for Overall Water Splitting. ChemSusChem, 2020, 13, 3222-3229.	3.6	85
2080	Ultrathin rGO-wrapped free-standing bimetallic CoNi ₂ S ₄ -carbon nanofibers: an efficient and robust bifunctional electrocatalyst for water splitting. Nanotechnology, 2020, 31, 275402.	1.3	9
2081	Gold-Incorporated Cobalt Phosphide Nanoparticles on Nitrogen-Doped Carbon for Enhanced Hydrogen Evolution Electrocatalysis. ACS Applied Materials & Interfaces, 2020, 12, 16548-16556.	4.0	55
2082	<i>In situ</i> monitoring of the electrochemically induced phase transition of thermodynamically metastable 1T-MoS ₂ at nanoscale. Nanoscale, 2020, 12, 9246-9254.	2.8	33
2083	Core-Shell Structured NiFeSn@NiFe (Oxy)Hydroxide Nanospheres from an Electrochemical Strategy for Electrocatalytic Oxygen Evolution Reaction. Advanced Science, 2020, 7, 1903777.	5.6	69
2084	Surface Co ³⁺ -rich engineering of Co(S Se1â€²) ₂ nanocrystals coated with ultrathin carbon layer for efficient OER/HER. Applied Surface Science, 2020, 517, 146183.	3.1	21
2085	Copper facilitated nickel oxy-hydroxide films as efficient synergistic oxygen evolution electrocatalyst. Journal of Catalysis, 2020, 384, 189-198.	3.1	5
2086	In situ synthesis of highly dispersed Co-N-C catalysts with carbon-coated sandwich structures based on defect anchoring. New Journal of Chemistry, 2020, 44, 5404-5409.	1.4	14
2087	Distance Synergy of MoS ₂ -Confined Rhodium Atoms for Highly Efficient Hydrogen Evolution. Angewandte Chemie - International Edition, 2020, 59, 10502-10507.	7.2	122
2088	Nanoscale Assembly of 2D Materials for Energy and Environmental Applications. Advanced Materials, 2020, 32, e1907006.	11.1	106
2089	Distance Synergy of MoS ₂ -Confined Rhodium Atoms for Highly Efficient Hydrogen Evolution. Angewandte Chemie, 2020, 132, 10588-10593.	1.6	37
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2092	Water Oxidation on TiO ₂ : A Comparative DFT Study of 1e ⁺ , 2e ⁺ , and 4e ⁺ Processes on Rutile, Anatase, and Brookite. <i>Journal of Physical Chemistry C</i> , 2020, 124, 8094-8100.	1.5	30
2093	A Ti ₃ C ₂ O ₂ supported single atom, trifunctional catalyst for electrochemical reactions. <i>Journal of Materials Chemistry A</i> , 2020, 8, 7801-7807.	5.2	69
2094	Interfacial Engineering of MoO ₂ /FeP Heterojunction for Highly Efficient Hydrogen Evolution Coupled with Biomass Electrooxidation. <i>Advanced Materials</i> , 2020, 32, e2000455.	11.1	401
2095	Controlled engineering of nickel carbide induced N-enriched carbon nanotubes for hydrogen and oxygen evolution reactions in wide pH range. <i>Electrochimica Acta</i> , 2020, 341, 136032.	2.6	45
2096	Energy-efficient hydrogen production over a high-performance bifunctional NiMo-based nanorods electrode. <i>Journal of Colloid and Interface Science</i> , 2020, 571, 48-54.	5.0	37
2097	Encapsulating hollow (Co,Fe)P nanoframes into N,P-codoped graphene aerogel for highly efficient water splitting. <i>Journal of Power Sources</i> , 2020, 456, 228015.	4.0	40
2098	Defect Engineering for Fuel Cell Electrocatalysts. <i>Advanced Materials</i> , 2020, 32, e1907879.	11.1	338
2099	Double-Solvent Induced Ultrafine Ruthenium Nanoparticles on Porous Carbon for Highly Efficient Hydrogen Evolution Reaction. <i>ChemCatChem</i> , 2020, 12, 2880-2885.	1.8	7
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2101	Neutral and alkaline chemical environment dependent synthesis of Mn ₃ O ₄ for oxygen evolution reaction (OER). <i>Materials Chemistry and Physics</i> , 2020, 247, 122864.	2.0	16
2102	Design Strategies for Development of TMD-Based Heterostructures in Electrochemical Energy Systems. <i>Matter</i> , 2020, 2, 526-553.	5.0	312
2103	Atomic site electrocatalysts for water splitting, oxygen reduction and selective oxidation. <i>Chemical Society Reviews</i> , 2020, 49, 2215-2264.	18.7	582
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2111	Hydrogen Production from Urea Sewage on NiFe-Based Porous Electrocatalysts. <i>ACS Sustainable Chemistry and Engineering</i> , 0, , .	3.2	15
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2117	MOF-Derived Sulfide-Based Electrocatalyst and Scaffold for Boosted Hydrogen Production. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 33595-33602.	4.0	123
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2125	Co ₉ S ₈ Nanoparticle-Supported Nitrogen-Doped Carbon as a Robust Catalyst for Oxygen Reduction Reaction in Both Acidic and Alkaline Conditions. <i>ChemElectroChem</i> , 2020, 7, 3123-3134.	1.7	3
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2141	Rational modulating electronegativity of substituents in amorphous metal-organic frameworks for water oxidation catalysis. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 9723-9732.	3.8	18
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2152	Turning Cotton to Self-Supported Electrocatalytic Carbon Electrode for Highly Efficient Oxygen Reduction. <i>Electrocatalysis</i> , 2020, 11, 317-328.	1.5	3
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2176	Strategies for design of electrocatalysts for hydrogen evolution under alkaline conditions. <i>Materials Today</i> , 2020, 36, 125-138.	8.3	308
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2178	Electrochemically Exfoliated β -Co(OH) ₂ Nanostructures for Enhanced Oxygen Evolution Electrocatalysis. <i>ACS Applied Energy Materials</i> , 2020, 3, 1461-1467.	2.5	46
2179	Efficient electron transmission in covalent organic framework nanosheets for highly active electrocatalytic carbon dioxide reduction. <i>Nature Communications</i> , 2020, 11, 497.	5.8	280
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2182	Multifunctional electrocatalytic activity of coronene-based two-dimensional metal-organic frameworks: TM-PTC. <i>Applied Surface Science</i> , 2020, 511, 145393.	3.1	18
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2187	Emerging covalent organic frameworks tailored materials for electrocatalysis. <i>Nano Energy</i> , 2020, 70, 104525.	8.2	143
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2196	Design aktiver atomarer Zentren für HER-Elektrokatalysatoren. <i>Angewandte Chemie</i> , 2020, 132, 20978-20998.	1.6	18
2197	Cobalt sulfide nanoparticles: Synthesis, water splitting and supercapacitance studies. <i>Materials Science in Semiconductor Processing</i> , 2020, 109, 104925.	1.9	29
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2200	Recent Advances on Water Splitting Electrocatalysis Mediated by Noble Metal-Based Nanostructured Materials. <i>Advanced Energy Materials</i> , 2020, 10, 1903120.	10.2	560
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2203	Achieving Rich and Active Alkaline Hydrogen Evolution Heterostructures via Interface Engineering on 2D 1T-TaMoS ₂ Quantum Sheets. <i>Advanced Functional Materials</i> , 2020, 30, 2000551.	7.8	83
2204	Heterostructured Ni ²⁺ /Mo ⁶⁺ /N nanoparticles decorated on reduced graphene oxide as efficient and robust electrocatalyst for hydrogen evolution reaction. <i>Carbon</i> , 2020, 165, 122-128.	5.4	37
2205	Recent Advances in Noble Metal-Free Catalysts for Electrocatalytic Synthesis of Ammonia under Ambient Conditions. <i>Chemistry - an Asian Journal</i> , 2020, 15, 1791-1807.	1.7	8
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2209	Se-Rich MoSe ₂ Nanosheets and Their Superior Electrocatalytic Performance for Hydrogen Evolution Reaction. <i>ACS Nano</i> , 2020, 14, 6295-6304.	7.3	125
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2218	From metal-organic frameworks to single/dual-atom and cluster metal catalysts for energy applications. <i>Energy and Environmental Science</i> , 2020, 13, 1658-1693.	15.6	323
2219	Fe-doped Co ₃ O ₄ polycrystalline nanosheets as a binder-free bifunctional cathode for robust and efficient zinc-air batteries. <i>Chemical Communications</i> , 2020, 56, 5374-5377.	2.2	36
2220	Coupling amorphous cobalt hydroxide nanoflakes on Sr ₂ Fe _{1.5} Mo _{0.5} O _{5+δ} perovskite nanofibers to induce bifunctionality for water splitting. <i>Nanoscale</i> , 2020, 12, 9048-9057.	2.8	33
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2222	Recent advances in nanostructured intermetallic electrocatalysts for renewable energy conversion reactions. <i>Journal of Materials Chemistry A</i> , 2020, 8, 8195-8217.	5.2	64
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2229	Preparation of cobalt-based nanomaterials carried by nitrogen-doped carbon nanotubes as high performance electrocatalysts for hydrogen evolution reaction. <i>New Carbon Materials</i> , 2020, 35, 87-96.	2.9	7
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2232	Recent Advances in Non-Noble Bifunctional Oxygen Electrocatalysts toward Large-Scale Production. <i>Advanced Functional Materials</i> , 2020, 30, 2000503.	7.8	226
2233	Recent advances on metal alkoxide-based electrocatalysts for water splitting. <i>Journal of Materials Chemistry A</i> , 2020, 8, 10130-10149.	5.2	43
2234	Porous Monolithic Electrode of Ni ₃ FeN on 3D Graphene for Efficient Oxygen Evolution. <i>Journal of Nanoscience and Nanotechnology</i> , 2020, 20, 5175-5181.	0.9	8

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2236	In-situ synthesis of free-standing FeNi-oxyhydroxide nanosheets as a highly efficient electrocatalyst for water oxidation. <i>Chemical Engineering Journal</i> , 2020, 395, 125180.	6.6	100
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2238	Halides-assisted electrochemical synthesis of Cu/Cu ₂ O/CuO core-shell electrocatalyst for oxygen evolution reaction. <i>Journal of Power Sources</i> , 2020, 457, 228058.	4.0	34
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2252	Computational Screening of 2D Ordered Double Transition-Metal Carbides (MXenes) as Electrocatalysts for Hydrogen Evolution Reaction. <i>Journal of Physical Chemistry C</i> , 2020, 124, 10584-10592.	1.5	62

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2254	Manipulating dehydrogenation kinetics through dual-doping Co ₃ N electrode enables highly efficient hydrazine oxidation assisting self-powered H ₂ production. <i>Nature Communications</i> , 2020, 11, 1853.	5.8	229
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2268	Grain Boundaries Boost Oxygen Evolution Reaction in NiFe Electrocatalysts. <i>Small Methods</i> , 2021, 5, 2000755.	4.6	22
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2957	Cobalt-Iron-Phosphate Hydrogen Evolution Reaction Electrocatalyst for Solar-Driven Alkaline Seawater Electrolyzer. <i>Nanomaterials</i> , 2021, 11, 2989.	1.9	14
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2977	An Ultrafast and Ultra-Low-Temperature Hydrogen Gas-Driven Proton Battery. <i>Journal of the American Chemical Society</i> , 2021, 143, 20302-20308.	6.6	73
2978	Cobalt Single Atom Incorporated in Ruthenium Oxide Sphere: A Robust Bifunctional Electrocatalyst for HER and OER. <i>Angewandte Chemie</i> , 2022, 134, .	1.6	105

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2982	A telluride-doped porous carbon as highly efficient bifunctional catalyst for rechargeable Zn-air batteries. <i>Electrochimica Acta</i> , 2022, 404, 139606.	2.6	12
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3035	Advanced interfacial engineering of oxygen-enriched Fe Sn ¹⁺ Se nanostructures for efficient overall water splitting and flexible zinc-air batteries. <i>Applied Catalysis B: Environmental</i> , 2022, 305, 120924.	10.8	33
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3037	Theoretical Study Oxygen Reduction Activity of Phosphorus-doped Graphene Nanoribbons. <i>Journal of Material Science and Technology Research</i> , 0, 7, .	0.2	0
3038	Design and Synthesis of Hollow Nanostructures for Electrochemical Water Splitting. <i>Advanced Science</i> , 2022, 9, e2105135.	5.6	110
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3067	Integration of partially phosphatized bimetal centers into trifunctional catalyst for high-performance hydrogen production and flexible Zn-air battery. <i>Science China Materials</i> , 2022, 65, 1176-1186.	3.5	44
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3072	Catalytic activity of Ru ₄ -doped vacancy fullerenes (Ru ₄ -C ₅₄) theoretical investigation. <i>Applied Organometallic Chemistry</i> , 2022, 36, .	1.7	2
3073	Coordination modulation of iridium single-atom catalyst maximizing water oxidation activity. <i>Nature Communications</i> , 2022, 13, 24.	5.8	99
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3077	Regulation of hydrogen evolution performance of titanium oxide-carbon composites at high current density with a Ti-O hybrid orbital. , 2022, 4, 480-490.		11
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3079	Cu vacancy engineering on facet dependent CuO to enhance water oxidation efficiency. <i>International Journal of Hydrogen Energy</i> , 2022, 47, 9261-9272.	3.8	9
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3082	Cobalt Nanocluster-Decorated N-Rich Hierarchical Carbon Architectures Efficiently Catalyze Oxygen Reduction and Hydrogen Evolution Reactions. <i>ACS Sustainable Chemistry and Engineering</i> , 2022, 10, 2001-2009.	3.2	8
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3084	Band structure engineering of W replacement in ReSe ₂ nanosheets for enhancing hydrogen evolution. <i>Chemical Communications</i> , 2022, 58, 2682-2685.	2.2	9
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3207	Accelerating water oxidation kinetics via synergistic in-layer modification and interlayer reconstruction over hetero-epitaxial Fe-Mn-O nanosheets. <i>Chemical Engineering Journal</i> , 2022, 441, 136122.	6.6	10
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3780	Carbon-supported non-noble metal single-atom catalysts for electro-catalytic hydrogen evolution reaction. <i>International Journal of Hydrogen Energy</i> , 2023, 48, 17106-17136.	3.8	9
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