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## Combining theory and experiment in electrocatalysis: Insights into materials design

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2192	Unlocking the Electrocatalytic Activity of Antimony for CO <sub>2</sub> Reduction by Two-Dimensional Engineering of the Bulk Material. <b>2017</b> , 129, 14910-14914	45
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2180	Atomically Dispersed Copper-Platinum Dual Sites Alloyed with Palladium Nanorings Catalyze the Hydrogen Evolution Reaction. <b>2017</b> , 56, 16047-16051	164
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2168	The Nature of Hydrated Protons on Platinum Surfaces. <b>2017</b> , 23, 17566-17575	10
2167	Accounting for Bifurcating Pathways in the Screening for CO2 Reduction Catalysts. <b>2017</b> , 7, 7346-7351	54
2166	Metallic Transition Metal Selenide Holey Nanosheets for Efficient Oxygen Evolution Electrocatalysis. <b>2017</b> , 11, 9550-9557	206
2165	Molybdenum diboride nanoparticles as a highly efficient electrocatalyst for the hydrogen evolution reaction. <b>2017</b> , 1, 1928-1934	63
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2162	Alchemical Predictions for Computational Catalysis: Potential and Limitations. <b>2017</b> , 8, 5002-5007	39
2161	Investigating Catalyst-Support Interactions To Improve the Hydrogen Evolution Reaction Activity of Thiomolybdate [Mo3S13]2- Nanoclusters. <b>2017</b> , 7, 7126-7130	55
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2158	Nickel-Based Electrocatalysts for Energy-Related Applications: Oxygen Reduction, Oxygen Evolution, and Hydrogen Evolution Reactions. <b>2017</b> , 7, 7196-7225	568
2157	Surface science: Catalytic hotspots get noisy. <b>2017</b> , 549, 34-35	3
2156	Investigation of high oxygen reduction reaction catalytic performance on Mn-based mullite SmMn2O5. <b>2017</b> , 5, 20922-20931	28
2155	Effects of Gold Substrates on the Intrinsic and Extrinsic Activity of High-Loading Nickel-Based Oxyhydroxide Oxygen Evolution Catalysts. <b>2017</b> , 7, 5399-5409	88
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2143	Electrochemical maps and movies of the hydrogen evolution reaction on natural crystals of molybdenite (MoS): basal edge plane activity. <b>2017</b> , 8, 6583-6593	112
2142	Frontiers of water oxidation: the quest for true catalysts. <b>2017</b> , 46, 6124-6147	168
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2131	Are Metal Chalcogenides, Nitrides, and Phosphides Oxygen Evolution Catalysts or Bifunctional Catalysts?. <b>2017</b> , 2, 1937-1938	666
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2096	Transition Metal-Modified Zirconium Phosphate Electrocatalysts for the Oxygen Evolution Reaction. <b>2017</b> , 7, 132	25
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2091	Recent advances in the nanoengineering of electrocatalysts for CO reduction. <b>2018</b> , 10, 6235-6260	109
2090	Traditional NiCo <sub>2</sub> S <sub>4</sub> Phase with Porous Nanosheets Array Topology on Carbon Cloth: A Flexible, Versatile and Fabulous Electrocatalyst for Overall Water and Urea Electrolysis. <b>2018</b> , 6, 5011-5020	114
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2088	Anchoring Iron-EDTA Complex on Graphene toward the Synthesis of Highly Efficient Fe-N-C Oxygen Reduction Electrocatalyst for Fuel Cells. <b>2018</b> , 36, 287-292	15
2087	Reversing the Tradeoff between Rate and Overpotential in Molecular Electrocatalysts for H <sub>2</sub> Production. <b>2018</b> , 8, 3286-3296	62
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2085	An Amorphous Noble-Metal-Free Electrocatalyst that Enables Nitrogen Fixation under Ambient Conditions. <b>2018</b> , 57, 6073-6076	443
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2082	Self-Templated Synthesis of Co <sub>1-x</sub> S Porous Hexagonal Microplates for Efficient Electrocatalytic Oxygen Evolution. <b>2018</b> , 5, 1167-1172	10

2081	The role of reticular chemistry in the design of CO reduction catalysts. <b>2018</b> , 17, 301-307	405
2080	Improved Electrocatalytic Performance in Overall Water Splitting with Rational Design of Hierarchical Co <sub>3</sub> O <sub>4</sub> @NiFe Layered Double Hydroxide Core-Shell Nanostructure. <b>2018</b> , 5, 1357-1363	27
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2076	Tailoring the d-Band Centers Enables Co N Nanosheets To Be Highly Active for Hydrogen Evolution Catalysis. <b>2018</b> , 57, 5076-5080	449
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2074	The effects of currents and potentials on the selectivities of copper toward carbon dioxide electroreduction. <b>2018</b> , 9, 925	145
2073	Tailoring the d-Band Centers Enables Co <sub>4</sub> N Nanosheets To Be Highly Active for Hydrogen Evolution Catalysis. <b>2018</b> , 130, 5170-5174	102
2072	Trends in activity for the oxygen evolution reaction on transition metal (M = Fe, Co, Ni) phosphide pre-catalysts. <b>2018</b> , 9, 3470-3476	309
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2069	Origin of enhanced catalytic activity of oxygen reduction reaction on zirconium oxynitrides: A first-principle study. <b>2018</b> , 317, 15-20	3
2068	Metal-organic framework-derived integrated nanoarrays for overall water splitting. <b>2018</b> , 6, 9009-9018	54
2067	Cultivating crystal lattice distortion in IrO <sub>x</sub> coupling with MnO to boost the oxygen evolution reaction with high intrinsic activity. <b>2018</b> , 54, 4959-4962	42
2066	Molten-salt synthesis of porous La <sub>0.6</sub> Sr <sub>0.4</sub> Co <sub>0.2</sub> Fe <sub>0.8</sub> O <sub>2.9</sub> perovskite as an efficient electrocatalyst for oxygen evolution. <b>2018</b> , 11, 4796-4805	24
2065	Palladium-based nanoelectrocatalysts for renewable energy generation and conversion. <b>2018</b> , 1, 29-40	22
2064	Probing Molecular-Scale Catalytic Interactions between Oxygen and Cobalt Phthalocyanine Using Tip-Enhanced Raman Spectroscopy. <b>2018</b> , 140, 5948-5954	50

2063	The Design of Water Oxidation Electrocatalysts from Nanoscale Metal-Organic Frameworks. <b>2018</b> , 24, 15143-15155	46
2062	Two-Dimensional MoS Confined Co(OH) Electrocatalysts for Hydrogen Evolution in Alkaline Electrolytes. <b>2018</b> , 12, 4565-4573	225
2061	Tunable Molecular-Scale Materials for Catalyzing the Low-Overpotential Electrochemical Conversion of CO. <b>2018</b> , 30, e1706238	39
2060	Anodic Hydrazine Oxidation Assists Energy-Efficient Hydrogen Evolution over a Bifunctional Cobalt Perselenide Nanosheet Electrode. <b>2018</b> , 130, 7775-7779	35
2059	A Hybrid Co Quaterpyridine Complex/Carbon Nanotube Catalytic Material for CO Reduction in Water. <b>2018</b> , 57, 7769-7773	74
2058	On-Chip in Situ Monitoring of Competitive Interfacial Anionic Chemisorption as a Descriptor for Oxygen Reduction Kinetics. <b>2018</b> , 4, 590-599	19
2057	Rational Electrode/Electrolyte Design for Efficient Ammonia Electrosynthesis under Ambient Conditions. <b>2018</b> , 3, 1219-1224	146
2056	Hydrogen adsorption trends on Al-doped NiP surfaces for optimal catalyst design. <b>2018</b> , 20, 13785-13791	8
2055	Effects of Catalyst Phase on the Hydrogen Evolution Reaction of Water Splitting: Preparation of Phase-Pure Films of FeP, Fe <sub>2</sub> P, and Fe <sub>3</sub> P and Their Relative Catalytic Activities. <b>2018</b> , 30, 3588-3598	86
2054	Cobalt Molybdenum Oxide Derived High-Performance Electrocatalyst for the Hydrogen Evolution Reaction. <b>2018</b> , 8, 5062-5069	82
2053	Amorphous NiFe layered double hydroxide nanosheets decorated on 3D nickel phosphide nanoarrays: a hierarchical core-shell electrocatalyst for efficient oxygen evolution. <b>2018</b> , 6, 13619-13623	105
2052	Spatially Confined Assembly of Monodisperse Ruthenium Nanoclusters in a Hierarchically Ordered Carbon Electrode for Efficient Hydrogen Evolution. <b>2018</b> , 130, 5950-5954	10
2051	Spatially Confined Assembly of Monodisperse Ruthenium Nanoclusters in a Hierarchically Ordered Carbon Electrode for Efficient Hydrogen Evolution. <b>2018</b> , 57, 5848-5852	105
2050	Cobalt Phosphide Composite Encapsulated within N,P-Doped Carbon Nanotubes for Synergistic Oxygen Evolution. <b>2018</b> , 14, e1800367	78
2049	Metal Catalysts for Heterogeneous Catalysis: From Single Atoms to Nanoclusters and Nanoparticles. <b>2018</b> , 118, 4981-5079	1947
2048	Synergistically enhanced hydrogen evolution electrocatalysis by in situ exsolution of metallic nanoparticles on perovskites. <b>2018</b> , 6, 13582-13587	56
2047	Computational screening of a single transition metal atom supported on the CN monolayer for electrochemical ammonia synthesis. <b>2018</b> , 20, 12835-12844	100
2046	Atomistic Elucidation of Sorption Processes in Hydrogen Evolution Reaction on a van der Waals Heterostructure. <b>2018</b> , 122, 10034-10041	13

2045	The Functionality of Surface Hydroxy Groups on the Selectivity and Activity of Carbon Dioxide Reduction over Cuprous Oxide in Aqueous Solutions. <b>2018</b> , 57, 7724-7728	59
2044	In Situ/Operando Characterization Techniques to Probe the Electrochemical Reactions for Energy Conversion. <b>2018</b> , 2, 1700395	90
2043	Recent Progress in the Theoretical Investigation of Electrocatalytic Reduction of CO <sub>2</sub> . <b>2018</b> , 1, 1800004	37
2042	A comparative technoeconomic analysis of pathways for commercial electrochemical CO <sub>2</sub> reduction to liquid products. <b>2018</b> , 11, 1536-1551	230
2041	Defect-rich (Co <sub>1-x</sub> CoS <sub>2</sub> ) <sub>x</sub> @Co <sub>9</sub> S <sub>8</sub> nanosheets derived from monomolecular precursor pyrolysis with excellent catalytic activity for hydrogen evolution reaction. <b>2018</b> , 6, 7977-7987	32
2040	Dynamic Changes in the Structure, Chemical State and Catalytic Selectivity of Cu Nanocubes during CO Electroreduction: Size and Support Effects. <b>2018</b> , 57, 6192-6197	188
2039	Approaching the self-consistency challenge of electrocatalysis with theory and computation. <b>2018</b> , 9, 189-197	22
2038	Dynamic Changes in the Structure, Chemical State and Catalytic Selectivity of Cu Nanocubes during CO <sub>2</sub> Electroreduction: Size and Support Effects. <b>2018</b> , 130, 6300-6305	51
2037	Impact of Textural Properties of Mesoporous Porphyrinic Carbon Electrocatalysts on Oxygen Reduction Reaction Activity. <b>2018</b> , 5, 1928-1936	21
2036	Unravelling in-situ formation of highly active mixed metal oxide CuInO <sub>2</sub> nanoparticles during CO <sub>2</sub> electroreduction. <b>2018</b> , 49, 40-50	16
2035	Fundamental limitation of electrocatalytic methane conversion to methanol. <b>2018</b> , 20, 11152-11159	47
2034	Porous Microrod Arrays Constructed by Carbon-Confined NiCo@NiCoO Core@Shell Nanoparticles as Efficient Electrocatalysts for Oxygen Evolution. <b>2018</b> , 30, e1705442	278
2033	Structure Effects of 2D Materials on Nickel Hydroxide for Oxygen Evolution Reaction. <b>2018</b> , 12, 3875-3885	132
2032	W-Based Atomic Laminates and Their 2D Derivative W C MXene with Vacancy Ordering. <b>2018</b> , 30, e1706409	145
2031	Die lokale Oberflächenstruktur und -zusammensetzung bestimmt die Wasserstoffentwicklung an Eisen-Nickelsulfiden. <b>2018</b> , 130, 4157-4161	7
2030	Activation of ultrathin SrTiO <sub>3</sub> with subsurface SrRuO <sub>3</sub> for the oxygen evolution reaction. <b>2018</b> , 11, 1762-1769	59
2029	Activating Titania for Efficient Electrocatalysis by Vacancy Engineering. <b>2018</b> , 8, 4288-4293	104
2028	Heterogeneously catalyzed two-step cascade electrochemical reduction of CO <sub>2</sub> to ethanol. <b>2018</b> , 274, 1-8	33

2027	Anchoring zero valence single atoms of nickel and iron on graphdiyne for hydrogen evolution. <b>2018</b> , 9, 1460	538
2026	Catalysts in metal-air batteries. <b>2018</b> , 8, 372-386	6
2025	Amorphous Ni(Fe)O H-coated nanocone arrays self-supported on stainless steel mesh as a promising oxygen-evolving anode for large scale water splitting. <b>2018</b> , 389, 160-168	18
2024	Supramolecular bimetallogels: a nanofiber network for bimetal/nitrogen co-doped carbon electrocatalysts. <b>2018</b> , 6, 8227-8232	20
2023	One-pot synthesized boron-doped RhFe alloy with enhanced catalytic performance for hydrogen evolution reaction. <b>2018</b> , 230, 58-64	89
2022	Iodide-derived nanostructured silver promotes selective and efficient carbon dioxide conversion into carbon monoxide. <b>2018</b> , 54, 2666-2669	39
2021	Tuning active sites on cobalt/nitrogen doped graphene for electrocatalytic hydrogen and oxygen evolution. <b>2018</b> , 265, 497-506	40
2020	Metal-organic frameworks for highly efficient oxygen electrocatalysis. <b>2018</b> , 39, 207-227	29
2019	Amorphous NiFe Nanotube Arrays Bifunctional Electrocatalysts for Efficient Electrochemical Overall Water Splitting. <b>2018</b> , 1, 1210-1217	48
2018	Urchin-Like Nanorods of Binary NiCoS Supported on Nickel Foam for Electrocatalytic Overall Water Splitting. <b>2018</b> , 165, H102-H108	33
2017	Confined organometallic Au <sub>1</sub> N <sub>x</sub> single-site as an efficient bifunctional oxygen electrocatalyst. <b>2018</b> , 46, 110-116	57
2016	Stability of CoP Electrocatalysts in Continuous and Interrupted Acidic Electrolysis of Water. <b>2018</b> , 5, 1230-1239	26
2015	Future Frontiers in Corrosion Science and Engineering, Part I. <b>2018</b> , 74, 3-4	7
2014	Atomically Thin Two-Dimensional Solids: An Emerging Platform for CO <sub>2</sub> Electroreduction. <b>2018</b> , 3, 624-633	55
2013	Understanding Catalytic Activity Trends in the Oxygen Reduction Reaction. <b>2018</b> , 118, 2302-2312	908
2012	Ultrathin Alumina Mask-Assisted Nanopore Patterning on Monolayer MoS <sub>2</sub> for Highly Catalytic Efficiency in Hydrogen Evolution Reaction. <b>2018</b> , 10, 8026-8035	41
2011	Trimetallic NiFeMo for Overall Electrochemical Water Splitting with a Low Cell Voltage. <b>2018</b> , 3, 546-554	120
2010	Carbon nanotubes intercalated Co/N-doped porous carbon nanosheets as efficient electrocatalyst for oxygen reduction reaction and zinc-air batteries. <b>2018</b> , 342, 163-170	74

2009	In Situ Synthesis of Efficient Water Oxidation Catalysts in Laser-Induced Graphene. <b>2018</b> , 3, 677-683	64
2008	Single-Site Active Iron-Based Bifunctional Oxygen Catalyst for a Compressible and Rechargeable Zinc-Air Battery. <b>2018</b> , 12, 1949-1958	255
2007	Local Surface Structure and Composition Control the Hydrogen Evolution Reaction on Iron Nickel Sulfides. <b>2018</b> , 57, 4093-4097	79
2006	A review of anion-regulated multi-anion transition metal compounds for oxygen evolution electrocatalysis. <b>2018</b> , 5, 521-534	76
2005	Recent Progress on Multimetal Oxide Catalysts for the Oxygen Evolution Reaction. <b>2018</b> , 8, 1702774	408
2004	Well-Coupled Nanohybrids Obtained by Component-Controlled Synthesis and in Situ Integration of Mn Pd Nanocrystals on Vulcan Carbon for Electrocatalytic Oxygen Reduction. <b>2018</b> , 10, 8155-8164	19
2003	A Universal Approach To Determine the Free Energy Diagram of an Electrocatalytic Reaction. <b>2018</b> , 8, 1864-1879	89
2002	Rational Design of Silver Sulfide Nanowires for Efficient CO <sub>2</sub> Electroreduction in Ionic Liquid. <b>2018</b> , 8, 1469-1475	51
2001	Template-directed synthesis of sulphur doped NiCoFe layered double hydroxide porous nanosheets with enhanced electrocatalytic activity for the oxygen evolution reaction. <b>2018</b> , 6, 3224-3230	122
2000	Comprehensive Understanding of the Spatial Configurations of CeO <sub>2</sub> in NiO for the Electrocatalytic Oxygen Evolution Reaction: Embedded or Surface-Loaded. <b>2018</b> , 28, 1706056	99
1999	Probing the geometry of copper and silver adatoms on magnetite: quantitative experiment versus theory. <b>2018</b> , 10, 2226-2230	19
1998	In Situ Growth of MoS Nanosheet Arrays and TS (T = Fe, Co, and Ni) Nanocubes onto Molybdate for Efficient Oxygen Evolution Reaction and Improved Hydrogen Evolution Reaction. <b>2018</b> , 3, 464-471	17
1997	Accelerated Hydrogen Evolution Kinetics on NiFe-Layered Double Hydroxide Electrocatalysts by Tailoring Water Dissociation Active Sites. <b>2018</b> , 30, 1706279	390
1996	Die Wasserstoffentwicklungsreaktion in alkalischer Lösung: Von der Theorie und Einkristallmodellen zu praktischen Elektrokatalysatoren. <b>2018</b> , 130, 7690-7702	64
1995	Influence of a thin aluminum hydroxide coating layer on the suspension stability and reductive reactivity of nanoscale zero-valent iron. <b>2018</b> , 226, 554-564	32
1994	Electroreduction of CO on Polycrystalline Copper at Low Overpotentials. <b>2018</b> , 3, 634-640	50
1993	Size-Effect on Electrochemical Hydrogen Evolution Reaction by Single-Size Platinum Nanocluster Catalysts Immobilized on Strontium Titanate. <b>2018</b> , 61, 126-135	17
1992	Ultrathin Cobalt Oxide Overlayer Promotes Catalytic Activity of Cobalt Nitride for the Oxygen Reduction Reaction. <b>2018</b> , 122, 4783-4791	36

1991	Strain Engineering to Enhance the Electrooxidation Performance of Atomic-Layer Pt on Intermetallic PtGa. <b>2018</b> , 140, 2773-2776	141
1990	In Situ Grown Epitaxial Heterojunction Exhibits High-Performance Electrocatalytic Water Splitting. <b>2018</b> , 30, e1705516	273
1989	General Techno-Economic Analysis of CO <sub>2</sub> Electrolysis Systems. <b>2018</b> , 57, 2165-2177	534
1988	Polyoxometalate-encapsulated twenty-nuclear silver-tetrazole nanocage frameworks as highly active electrocatalysts for the hydrogen evolution reaction. <b>2018</b> , 54, 1964-1967	52
1987	Trends in adsorption of electrocatalytic water splitting intermediates on cubic ABO oxides. <b>2018</b> , 20, 3813-3818	66
1986	Convenient synthesis and engineering of ultrafine Co <sub>3</sub> O <sub>4</sub> -incorporated carbon composite: towards practical application of environmental remediation. <b>2018</b> , 6, 3454-3461	48
1985	Clay-Inspired MXene-Based Electrochemical Devices and Photo-Electrocatalyst: State-of-the-Art Progresses and Challenges. <b>2018</b> , 30, e1704561	301
1984	Synergism of Geometric Construction and Electronic Regulation: 3D Se-(NiCo)S/(OH) Nanosheets for Highly Efficient Overall Water Splitting. <b>2018</b> , 30, e1705538	193
1983	POM & MOF-based Electrocatalysts for Energy-related Reactions. <b>2018</b> , 10, 1703-1730	75
1982	Adsorption-energy-based activity descriptors for electrocatalysts in energy storage applications. <b>2018</b> , 5, 327-341	74
1981	Kern-Schale-Strukturierung rein metallischer Aerogele für eine hocheffiziente Nutzung von Platin für die Sauerstoffreduktion. <b>2018</b> , 130, 3014-3018	7
1980	Forest-like NiCoP@Cu <sub>3</sub> P supported on copper foam as a bifunctional catalyst for efficient water splitting. <b>2018</b> , 6, 2100-2106	104
1979	A mechanism study on the hydrogen evolution reaction catalyzed by molybdenum disulfide complexes. <b>2018</b> , 54, 1113-1116	11
1978	Structural and Electronic Descriptors of Catalytic Activity of Graphene-Based Materials: First-Principles Theoretical Analysis. <b>2018</b> , 14, 1703609	37
1977	Mesoporous Ag-doped Co <sub>3</sub> O <sub>4</sub> nanowire arrays supported on FTO as efficient electrocatalysts for oxygen evolution reaction in acidic media. <b>2018</b> , 119, 54-61	100
1976	Balancing the Hydrogen Evolution Reaction, Surface Energetics, and Stability of Metallic MoS Nanosheets via Covalent Functionalization. <b>2018</b> , 140, 441-450	184
1975	Amine-Modulated/Engineered Interfaces of NiMo Electrocatalysts for Improved Hydrogen Evolution Reaction in Alkaline Solutions. <b>2018</b> , 10, 1728-1733	45
1974	Elektrifizierung der organischen Synthese. <b>2018</b> , 130, 5694-5721	233

1973	Electrifying Organic Synthesis. <b>2018</b> , 57, 5594-5619	650
1972	Nickel Hydr(oxy)oxide Nanoparticles on Metallic MoS Nanosheets: A Synergistic Electrocatalyst for Hydrogen Evolution Reaction. <b>2018</b> , 5, 1700644	83
1971	Evaluation of the H Evolving Activity of Benzenehexathiolate Coordination Frameworks and the Effect of Film Thickness on H Production. <b>2018</b> , 10, 1719-1727	67
1970	Electrochemical recognition of alkylimidazolium-mediated ultrafast charge transfer on graphene surfaces. <b>2018</b> , 54, 666-669	0
1969	Electrochemically Synthesized Nanoporous Molybdenum Carbide as a Durable Electrocatalyst for Hydrogen Evolution Reaction. <b>2018</b> , 5, 1700601	35
1968	Ultrafine PtO nanoparticles coupled with a Co(OH)F nanowire array for enhanced hydrogen evolution. <b>2018</b> , 54, 810-813	54
1967	Core-Shell Structuring of Pure Metallic Aerogels towards Highly Efficient Platinum Utilization for the Oxygen Reduction Reaction. <b>2018</b> , 57, 2963-2966	116
1966	Tuning the Basal Plane Functionalization of Two-Dimensional Metal Carbides (MXenes) To Control Hydrogen Evolution Activity. <b>2018</b> , 1, 173-180	192
1965	Barium Bismuth Niobate Double Perovskite/Tungsten Oxide Nanosheet Photoanode for High-Performance Photoelectrochemical Water Splitting. <b>2018</b> , 8, 1701655	47
1964	Nitrogenated-Graphite-Encapsulated Carbon Black as a Metal-Free Electrocatalyst for the Oxygen Evolution Reaction in Acid. <b>2018</b> , 5, 583-588	10
1963	Crystallographic Facet Dependence of the Hydrogen Evolution Reaction on CoPS: Theory and Experiments. <b>2018</b> , 8, 1143-1152	49
1962	Metallic Intermediate Phase Inducing Morphological Transformation in Thermal Nitridation: NiFeN-Based Three-Dimensional Hierarchical Electrocatalyst for Water Splitting. <b>2018</b> , 10, 3699-3706	69
1961	Tuning the Activity of Carbon for Electrocatalytic Hydrogen Evolution via an Iridium-Cobalt Alloy Core Encapsulated in Nitrogen-Doped Carbon Cages. <b>2018</b> , 30, 1705324	152
1960	Preparation of High-Percentage 1T-Phase Transition Metal Dichalcogenide Nanodots for Electrochemical Hydrogen Evolution. <b>2018</b> , 30, 1705509	234
1959	Stable High-Index Faceted Pt Skin on Zigzag-Like PtFe Nanowires Enhances Oxygen Reduction Catalysis. <b>2018</b> , 30, 1705515	223
1958	Hierarchical tubular structures composed of CoPx and carbon nanotubes: Highly effective electrocatalyst for oxygen reduction. <b>2018</b> , 130, 241-249	23
1957	Technical photosynthesis involving CO <sub>2</sub> electrolysis and fermentation. <b>2018</b> , 1, 32-39	295
1956	General synthesis and definitive structural identification of MN <sub>4</sub> C <sub>4</sub> single-atom catalysts with tunable electrocatalytic activities. <b>2018</b> , 1, 63-72	968



1955	Reduced Graphene Oxide-Wrapped Co Fe S /Co,Fe-N-C Composite as Bifunctional Electrocatalyst for Oxygen Reduction and Evolution. <b>2018</b> , 14, 1703748	98
1954	Molybdenum Sulphoselenophosphide Spheroids as an Effective Catalyst for Hydrogen Evolution Reaction. <b>2018</b> , 14, 1703862	30
1953	Low-dimensional catalysts for hydrogen evolution and CO2 reduction. <b>2018</b> , 2,	441
1952	Enhancing Full Water-Splitting Performance of Transition Metal Bifunctional Electrocatalysts in Alkaline Solutions by Tailoring CeO <sub>2</sub> /Transition Metal Oxides/Ni Nanointerfaces. <b>2018</b> , 3, 290-296	101
1951	Photocatalytically Active Superstructures of Quantum Dots and Iron Porphyrins for Reduction of CO to CO in Water. <b>2018</b> , 12, 568-575	102
1950	In-situ cobalt and nitrogen doped mesoporous graphitic carbon electrocatalyst via directly pyrolyzing hyperbranched cobalt phthalocyanine for hydrogen evolution reaction. <b>2018</b> , 262, 48-56	37
1949	CoFe nanoalloy particles encapsulated in nitrogen-doped carbon layers as bifunctional oxygen catalyst derived from a Prussian blue analogue. <b>2018</b> , 740, 743-753	30
1948	Activity and Stability of Pt/C and Pt-Cu/C Electrocatalysts. <b>2018</b> , 9, 550-562	18
1947	Strategies for Enhancing the Electrocatalytic Activity of Mn/C Catalysts for the Oxygen Reduction Reaction. <b>2018</b> , 61, 1077-1100	18
1946	Enhanced Catalysis of Electrochemical Overall Water Splitting in Alkaline Media by Fe Doping in Ni <sub>3</sub> S <sub>2</sub> Nanosheet Arrays. <b>2018</b> , 8, 5431-5441	328
1945	An electrochemical anodization strategy towards high-activity porous MoS electrodes for the hydrogen evolution reaction.. <b>2018</b> , 8, 15030-15035	4
1944	Descriptor of catalytic activity of metal sulfides for oxygen reduction reaction: a potential indicator for mineral flotation. <b>2018</b> , 6, 9650-9656	26
1943	Electrocatalytic and photocatalytic hydrogen evolution integrated with organic oxidation. <b>2018</b> , 54, 5943-595588	
1942	In-situ reaction-growth of PtNiX nanocrystals on supports for enhanced electrochemical catalytic oxidation of ethanol via continuous flow microfluidic process. <b>2018</b> , 278, 149-155	9
1941	Confined Molybdenum Phosphide in P-Doped Porous Carbon as Efficient Electrocatalysts for Hydrogen Evolution. <b>2018</b> , 10, 17140-17146	99
1940	Hybrid 2D Dual-Metal/Organic Frameworks for Enhanced Water Oxidation Catalysis. <b>2018</b> , 28, 1801554	367
1939	Anodic Hydrazine Oxidation Assists Energy-Efficient Hydrogen Evolution over a Bifunctional Cobalt Perselenide Nanosheet Electrode. <b>2018</b> , 57, 7649-7653	241
1938	Auto-optimizing Hydrogen Evolution Catalytic Activity of ReS through Intrinsic Charge Engineering. <b>2018</b> , 12, 4486-4493	77

1937	FeOx/FeP hybrid nanorods neutral hydrogen evolution electrocatalysis: insight into interface. <b>2018</b> , 6, 9467-9472	77
1936	Advancing semiconductor-electrocatalyst systems: application of surface transformation films and nanosphere lithography. <b>2018</b> , 208, 523-535	2
1935	Computational predictive design for metal-decorated-graphene size-specific subnanometer to nanometer ORR catalysts. <b>2018</b> , 312, 105-117	8
1934	Toward Visible-Light Photochemical CO <sub>2</sub> -to-CH <sub>4</sub> Conversion in Aqueous Solutions Using Sensitized Molecular Catalysis. <b>2018</b> , 122, 13834-13839	24
1933	Cobalt incorporated MoS <sub>2</sub> hollow structure with rich out-of-plane edges for efficient hydrogen production. <b>2018</b> , 276, 81-91	23
1932	Intermetallic NiTa Electrocatalyst for the Oxygen Evolution Reaction in Highly Acidic Electrolytes. <b>2018</b> , 57, 6010-6015	41
1931	Electrodeposition of Cobalt Phosphosulfide Nanosheets on Carbon Fiber Paper as Efficient Electrocatalyst for Oxygen Evolution. <b>2018</b> , 5, 1677-1682	9
1930	A theoretical study on the surface and interfacial properties of Ni <sub>3</sub> P for the hydrogen evolution reaction. <b>2018</b> , 6, 7827-7834	36
1929	A metal-vacancy-solid-solution NiAlP nanowall array bifunctional electrocatalyst for exceptional all-pH overall water splitting. <b>2018</b> , 6, 9420-9427	47
1928	A promising graphitic N-dominated porous carbon catalyst derived from lotus leaves for oxygen reduction reaction. <b>2018</b> , 24, 3601-3609	8
1927	Electrochemical degradation of fluoxetine on nanotube array intercalated anode with enhanced electronic transport and hydroxyl radical production. <b>2018</b> , 346, 662-671	59
1926	Strongly coupling of Co <sub>9</sub> S <sub>8</sub> /Zn-Co-S heterostructures rooted in carbon nanocages towards efficient oxygen evolution reaction. <b>2018</b> , 361, 322-330	55
1925	Iron-Based Perovskites for Catalyzing Oxygen Evolution Reaction. <b>2018</b> , 122, 8445-8454	74
1924	Study of cobalt boride-derived electrocatalysts for overall water splitting. <b>2018</b> , 43, 6076-6087	56
1923	NiCo <sub>2</sub> O <sub>4</sub> nanoframes with a nanosheet surface as efficient electrocatalysts for the oxygen evolution reaction. <b>2018</b> , 2, 1155-1164	35
1922	Dual Tuning of Ni-Co-A (A = P, Se, O) Nanosheets by Anion Substitution and Holey Engineering for Efficient Hydrogen Evolution. <b>2018</b> , 140, 5241-5247	347
1921	NiO as a Bifunctional Promoter for RuO <sub>4</sub> toward Superior Overall Water Splitting. <b>2018</b> , 14, e1704073	147
1920	Hollow Mo-doped CoP nanoarrays for efficient overall water splitting. <b>2018</b> , 48, 73-80	418

1919	Phosphorus and Aluminum Codoped Porous NiO Nanosheets as Highly Efficient Electrocatalysts for Overall Water Splitting. <b>2018</b> , 3, 892-898	95
1918	Synergistic effect of an atomically dual-metal doped catalyst for highly efficient oxygen evolution. <b>2018</b> , 6, 6840-6846	76
1917	1T@2H-MoSe <sub>2</sub> nanosheets directly arrayed on Ti plate: An efficient electrocatalytic electrode for hydrogen evolution reaction. <b>2018</b> , 11, 4587-4598	40
1916	Metal Ruthenate Perovskites as Heterogeneous Catalysts for the Hydrolysis of Ammonia Borane. <b>2018</b> , 3, 3501-3506	8
1915	Atomic-scale insights into surface species of electrocatalysts in three dimensions. <b>2018</b> , 1, 300-305	117
1914	Efficient hydrogen peroxide generation using reduced graphene oxide-based oxygen reduction electrocatalysts. <b>2018</b> , 1, 282-290	393
1913	MOF-derived nanohybrids for electrocatalysis and energy storage: current status and perspectives. <b>2018</b> , 54, 5268-5288	177
1912	Stannate derived bimetallic nanoparticles for electrocatalytic CO <sub>2</sub> reduction. <b>2018</b> , 6, 7851-7858	46
1911	Does the breaking of adsorption-energy scaling relations guarantee enhanced electrocatalysis?. <b>2018</b> , 8, 110-117	73
1910	Palladium - silicon nanocomposites as a stable electrocatalyst for hydrogen evolution reaction. <b>2018</b> , 522, 242-248	19
1909	Ultrarapid in Situ Synthesis of Cu <sub>2</sub> S Nanosheet Arrays on Copper Foam with Room-Temperature-Active Iodine Plasma for Efficient and Cost-Effective Oxygen Evolution. <b>2018</b> , 8, 3859-3864	97
1908	Nanoscale electrochemical movies and synchronous topographical mapping of electrocatalytic materials. <b>2018</b> , 210, 365-379	37
1907	Ultra-small freestanding amorphous molybdenum sulfide colloidal nanodots for highly efficient photocatalytic hydrogen evolution reaction. <b>2018</b> , 232, 446-453	45
1906	Universal Descriptor for Large-Scale Screening of High-Performance MXene-Based Materials for Energy Storage and Conversion. <b>2018</b> , 30, 2687-2693	47
1905	Toward the Decentralized Electrochemical Production of H <sub>2</sub> O <sub>2</sub> : A Focus on the Catalysis. <b>2018</b> , 8, 4064-4081	341
1904	Engineering Ultrathin C <sub>3</sub> N <sub>4</sub> Quantum Dots on Graphene as a Metal-Free Water Reduction Electrocatalyst. <b>2018</b> , 8, 3965-3970	99
1903	Toward Escherichia coli bacteria machine for water oxidation. <b>2018</b> , 136, 257-267	1
1902	Defect-rich carbon fiber electrocatalysts with porous graphene skin for flexible solid-state zinc-air batteries. <b>2018</b> , 15, 124-130	118

1901	Electrolyte Effect on Electrocatalytic Hydrogen Evolution Performance of One-Dimensional Cobalt Dithiolene Metal-Organic Frameworks: A Theoretical Perspective. <b>2018</b> , 1, 1688-1694	14
1900	Insight into the synergistic effect between nickel and tungsten carbide for catalyzing urea electrooxidation in alkaline electrolyte. <b>2018</b> , 232, 365-370	40
1899	Three-Dimensional Networks of S-Doped Fe/N/C with Hierarchical Porosity for Efficient Oxygen Reduction in Polymer Electrolyte Membrane Fuel Cells. <b>2018</b> , 10, 14602-14613	40
1898	Effect of mass transfer and kinetics in ordered Cu-mesostructures for electrochemical CO <sub>2</sub> reduction. <b>2018</b> , 232, 391-396	50
1897	Low Overpotential for Electrochemically Reducing CO <sub>2</sub> to CO on Nitrogen-Doped Graphene Quantum Dots-Wrapped Single-Crystalline Gold Nanoparticles. <b>2018</b> , 3, 946-951	34
1896	Hydrogen derived from water as a sustainable solar fuel: learning from biology. <b>2018</b> , 2, 927-935	18
1895	Regulating the Charge and Spin Ordering of Two-Dimensional Ultrathin Solids for Electrocatalytic Water Splitting. <b>2018</b> , 4, 1263-1283	158
1894	rGO/CNTs Supported Pyrolysis Derivatives of [Mo <sub>3</sub> S <sub>13</sub> ] <sub>2</sub> Clusters as Promising Electrocatalysts for Enhancing Hydrogen Evolution Performances. <b>2018</b> , 6, 6920-6931	12
1893	Nitrogen and Sulfur Co-Doped Hollow Carbon Nanospheres Derived from Surface-Attached Polyelectrolyte Monolayers. <b>2018</b> , 3, 3006-3013	1
1892	Preparation and Electrochemical Properties of (Ru,Ir,Sn)O <sub>2</sub> Electrodes Modified with Graphene Barrier. <b>2018</b> , 165, H177-H182	4
1891	Perspective: Size selected clusters for catalysis and electrochemistry. <b>2018</b> , 148, 110901	71
1890	A brief review of the computational modeling of CO <sub>2</sub> electroreduction on Cu electrodes. <b>2018</b> , 9, 158-165	42
1889	Triple Ni-Co-Mo metal sulfides with one-dimensional and hierarchical nanostructures towards highly efficient hydrogen evolution reaction. <b>2018</b> , 361, 204-213	83
1888	Emerging Two-Dimensional Nanomaterials for Electrocatalysis. <b>2018</b> , 118, 6337-6408	1057
1887	A functional design and synthesization for electrocatalytic hydrogen evolution material on MoS <sub>2</sub> /Co <sub>3</sub> S <sub>4</sub> hybrid hollow nanostructure. <b>2018</b> , 269, 262-273	35
1886	Cactus-Like NiCoP/NiCo-OH 3D Architecture with Tunable Composition for High-Performance Electrochemical Capacitors. <b>2018</b> , 28, 1800036	206
1885	In Situ Exfoliating and Generating Active Sites on Graphene Nanosheets Strongly Coupled with Carbon Fiber toward Self-Standing Bifunctional Cathode for Rechargeable Zn-Air Batteries. <b>2018</b> , 8, 1703539	99
1884	Synergistic effect of iron diselenide decorated multi-walled carbon nanotubes for enhanced heterogeneous electron transfer and electrochemical hydrogen evolution. <b>2018</b> , 270, 138-146	12

1883	Highly Selective Molecular Catalysts for the CO <sub>2</sub> -to-CO Electrochemical Conversion at Very Low Overpotential. Contrasting Fe vs Co Quaterpyridine Complexes upon Mechanistic Studies. <b>2018</b> , 8, 3411-3417	100
1882	On the hydrogen evolution reaction activity of graphene-hBN van der Waals heterostructures. <b>2018</b> , 20, 15007-15014	26
1881	Construction of hierarchical NiCoP hollow nanobricks with oriented nanosheets for efficient overall water splitting. <b>2018</b> , 11, 872-880	564
1880	Importance of Surface IrO in Stabilizing RuO for Oxygen Evolution. <b>2018</b> , 122, 947-955	58
1879	Water Splitting Catalysis Studied by using Real-Time Faradaic Efficiency Obtained through Coupled Electrolysis and Mass Spectrometry. <b>2018</b> , 5, 44-50	8
1878	Two-dimensional metal oxide nanosheets for rechargeable batteries. <b>2018</b> , 27, 117-127	83
1877	Computational modelling of water oxidation catalysts. <b>2018</b> , 7, 22-30	24
1876	N-Doped Porous Molybdenum Carbide Nanobelts as Efficient Catalysts for Hydrogen Evolution Reaction. <b>2018</b> , 224, 533-540	281
1875	Recent developments in electrochemical hydrogen evolution reaction. <b>2018</b> , 7, 7-14	69
1874	Organic-inorganic hybrids-directed ternary NiFeMoS anemone-like nanorods with scaly surface supported on nickel foam for efficient overall water splitting. <b>2018</b> , 334, 922-931	162
1873	Ripple-like NiFeCo sulfides on nickel foam derived from in-situ sulfurization of precursor oxides as efficient anodes for water oxidation. <b>2018</b> , 428, 370-376	17
1872	Hierarchical oxygen-implanted MoS nanoparticle decorated graphene for the non-enzymatic electrochemical sensing of hydrogen peroxide in alkaline media. <b>2018</b> , 176, 397-405	51
1871	Single-Crystalline Ultrathin Co <sub>3</sub> O <sub>4</sub> Nanosheets with Massive Vacancy Defects for Enhanced Electrocatalysis. <b>2018</b> , 8, 1701694	322
1870	Electrospun three dimensional Co/CoP@nitrogen-doped carbon nanofibers network for efficient hydrogen evolution. <b>2018</b> , 12, 44-53	115
1869	Structure-Activity Relationships for Pt-Free Metal Phosphide Hydrogen Evolution Electrocatalysts. <b>2018</b> , 24, 7298-7311	54
1868	Ni@Ru and NiCo@Ru Core-Shell Hexagonal Nanosandwiches with a Compositionally Tunable Core and a Regioselectively Grown Shell. <b>2018</b> , 14, 1702353	45
1867	Hierarchical Hollow Nanoprisms Based on Ultrathin Ni-Fe Layered Double Hydroxide Nanosheets with Enhanced Electrocatalytic Activity towards Oxygen Evolution. <b>2018</b> , 57, 172-176	375
1866	Water Splitting with an Enhanced Bifunctional Double Perovskite. <b>2018</b> , 8, 364-371	132

1865	Development and Elucidation of Superior Turnover Rates and Selectivity of Supported Molecular Catalysts. <b>2018</b> , 10, 1666-1685	2
1864	The Hydrogen Evolution Reaction in Alkaline Solution: From Theory, Single Crystal Models, to Practical Electrocatalysts. <b>2018</b> , 57, 7568-7579	659
1863	Die gemeinsamen Zwischenprodukte von Sauerstoffentwicklung und Auflösung während der Wasserelektrolyse an Iridium. <b>2018</b> , 130, 2514-2517	25
1862	A New Member of Electrocatalysts Based on Nickel Metaphosphate Nanocrystals for Efficient Water Oxidation. <b>2018</b> , 30, 1705045	117
1861	The use of an electrocatalytic redox electrolyte for pushing the energy density boundary of a flexible polyaniline electrode to a new limit. <b>2018</b> , 44, 489-498	88
1860	Sulfur-Modified Copper Catalysts for the Electrochemical Reduction of Carbon Dioxide to Formate. <b>2018</b> , 8, 837-844	132
1859	A novel method to significantly boost the electrocatalytic activity of carbon cloth for oxygen evolution reaction. <b>2018</b> , 129, 468-475	16
1858	Print-Light-Synthesis of Platinum Nanostructured Indium-Tin-Oxide Electrodes for Energy Research. <b>2018</b> , 3, 1700201	11
1857	Hierarchical Hollow Nanoprisms Based on Ultrathin Ni-Fe Layered Double Hydroxide Nanosheets with Enhanced Electrocatalytic Activity towards Oxygen Evolution. <b>2018</b> , 130, 178-182	50
1856	Ultra-small Cu nanoparticles embedded in N-doped carbon arrays for electrocatalytic CO <sub>2</sub> reduction reaction in dimethylformamide. <b>2018</b> , 11, 3678-3690	10
1855	Membrane-Coated Electrocatalysts: An Alternative Approach To Achieving Stable and Tunable Electrocatalysis. <b>2018</b> , 8, 457-465	40
1854	Electric field tuned MoS <sub>2</sub> /metal interface for hydrogen evolution catalyst from first-principles investigations. <b>2018</b> , 29, 03LT01	11
1853	Bimetallic Zeolitic Imidazolate Framework Derived Carbon Nanotubes Embedded with Co Nanoparticles for Efficient Bifunctional Oxygen Electrocatalyst. <b>2018</b> , 8, 1702048	143
1852	Group 6 transition metal dichalcogenide nanomaterials: synthesis, applications and future perspectives. <b>2018</b> , 3, 90-204	203
1851	Defect-Rich Ni <sub>3</sub> FeN Nanocrystals Anchored on N-Doped Graphene for Enhanced Electrocatalytic Oxygen Evolution. <b>2018</b> , 28, 1706018	127
1850	The Common Intermediates of Oxygen Evolution and Dissolution Reactions during Water Electrolysis on Iridium. <b>2018</b> , 57, 2488-2491	201
1849	On the Generality of Molecular Volcano Plots. <b>2018</b> , 10, 1586-1591	20
1848	Low-Voltage Electrolytic Hydrogen Production Derived from Efficient Water and Ethanol Oxidation on Fluorine-Modified FeOOH Anode. <b>2018</b> , 8, 526-530	74

1847	Free-standing single-crystalline NiFe-hydroxide nanoflake arrays: a self-activated and robust electrocatalyst for oxygen evolution. <b>2018</b> , 54, 463-466	91
1846	MoB/g-C <sub>3</sub> N <sub>4</sub> Interface Materials as a Schottky Catalyst to Boost Hydrogen Evolution. <b>2018</b> , 130, 505-509	48
1845	MoB/g-C N Interface Materials as a Schottky Catalyst to Boost Hydrogen Evolution. <b>2018</b> , 57, 496-500	228
1844	Scalable Fabrication of Highly Active and Durable Membrane Electrodes toward Water Oxidation. <b>2018</b> , 14, 1702109	17
1843	Nanoscale Trimetallic Metal-Organic Frameworks Enable Efficient Oxygen Evolution Electrocatalysis. <b>2018</b> , 130, 1906-1910	97
1842	Nanoscale Trimetallic Metal-Organic Frameworks Enable Efficient Oxygen Evolution Electrocatalysis. <b>2018</b> , 57, 1888-1892	398
1841	Bimetal metal-organic frameworks derived Co <sub>0.4</sub> Fe <sub>0.28</sub> P and Co <sub>0.37</sub> Fe <sub>0.26</sub> S nanocubes for enhanced oxygen evolution reaction. <b>2018</b> , 263, 576-584	27
1840	Rapidly catalysis of oxygen evolution through sequential engineering of vertically layered FeNi structure. <b>2018</b> , 43, 359-367	39
1839	A photo-responsive bifunctional electrocatalyst for oxygen reduction and evolution reactions. <b>2018</b> , 43, 130-137	74
1838	Effective bandgap narrowing of CuIn <sub>2</sub> S <sub>3</sub> quantum dots for photocatalytic H <sub>2</sub> production via cocatalyst-alleviated charge recombination. <b>2018</b> , 5, 258-265	31
1837	Pt Nanocluster Co-Catalysts for Photocatalytic Water Splitting. <b>2018</b> , 4, 64	3
1836	Oxygen Reduction Catalysts on Nanoparticle Electrodes. <b>2018</b> , 796-811	2
1835	Electronic Tuning of Co, Ni-Based Nanostructured (Hydr)oxides for Aqueous Electrocatalysis. <b>2018</b> , 28, 1804886	53
1834	Simultaneous edge and electronic control of MoS nanosheets through Fe doping for an efficient oxygen evolution reaction. <b>2018</b> , 10, 20113-20119	43
1833	Ambient NH <sub>3</sub> synthesis via electrochemical reduction of N over cubic sub-micron SnO particles. <b>2018</b> , 54, 12966-12969	115
1832	Electrochemical activity of 1T' structured rhenium selenide nanosheets via electronic structural modulation from selenium-vacancy generation. <b>2018</b> , 6, 22526-22533	28
1831	Structure-property relationships describing the buried interface between silicon oxide overlayers and electrocatalytic platinum thin films. <b>2018</b> , 6, 22287-22300	13
1830	Active site engineering of Fe- and Ni-sites for highly efficient electrochemical overall water splitting. <b>2018</b> , 6, 21445-21451	48

1829	Palladium single atoms supported by interwoven carbon nanotube and manganese oxide nanowire networks for enhanced electrocatalysis. <b>2018</b> , 6, 23366-23377	45
1828	An efficient cluster model to describe the oxygen reduction reaction activity of metal catalysts: a combined theoretical and experimental study. <b>2018</b> , 20, 26675-26680	10
1827	Iodide-mediated templating synthesis of highly porous rhodium nanospheres for enhanced dehydrogenation of ammonia borane. <b>2018</b> , 6, 24166-24174	18
1826	Simple preparation of carbon-bimetal oxide nanospinel for high-performance bifunctional oxygen electrocatalysts. <b>2018</b> , 42, 20156-20162	7
1825	Rhodium metal-rhodium oxide (Rh/Rh <sub>2</sub> O <sub>3</sub> ) nanostructures with Pt-like or better activity towards hydrogen evolution and oxidation reactions (HER, HOR) in acid and base: correlating its HOR/HER activity with hydrogen binding energy and oxophilicity of the catalyst. <b>2018</b> , 6, 23531-23541	76
1824	3D nanoporous Ni/V <sub>2</sub> O <sub>3</sub> hybrid nanoplate assemblies for highly efficient electrochemical hydrogen evolution. <b>2018</b> , 6, 21452-21457	25
1823	Chainmail catalyst of ultrathin P-doped carbon shell-encapsulated nickel phosphides on graphene towards robust and efficient hydrogen generation. <b>2018</b> , 6, 24107-24113	31
1822	An in situ generated amorphous CoFePi and crystalline Ni(PO <sub>3</sub> ) <sub>2</sub> heterojunction as an efficient electrocatalyst for oxygen evolution. <b>2018</b> , 6, 24920-24927	46
1821	Incorporation of Cu-N cofactors into graphene encapsulated Co as biomimetic electrocatalysts for efficient oxygen reduction. <b>2018</b> , 10, 21076-21086	28
1820	Morphology engineering of nickel molybdate hydrate nanoarray for electrocatalytic overall water splitting: from nanorod to nanosheet.. <b>2018</b> , 8, 35131-35138	14
1819	Structure, stability, electronic, magnetic, and catalytic properties of monometallic Pd, Au, and bimetallic Pd-Au core-shell nanoparticles. <b>2018</b> , 149, 244307	3
1818	CoP Nanoparticles Wrapped in Amorphous Porous Carbon as an Efficient and Stable Catalyst for Water Oxidation. <b>2018</b> , 6, 580	6
1817	Integration of Theory and Experiment on Mesoporous Nickel Sulfide Microsphere for Hydrogen Evolution Reaction. <b>2018</b> , 6, 15995-16000	38
1816	Heterostructured Electrocatalysts for Hydrogen Evolution Reaction Under Alkaline Conditions. <b>2018</b> , 10, 75	223
1815	Identification of Stabilizing High-Valent Active Sites by Operando High-Energy Resolution Fluorescence-Detected X-ray Absorption Spectroscopy for High-Efficiency Water Oxidation. <b>2018</b> , 140, 17263-17270	62
1814	Ketjen black carbon supported CoO@CoNi nanochains as an efficient electrocatalyst for oxygen evolution. <b>2018</b> , 43, 22942-22948	14
1813	Two-Dimensional, Ordered, Double Transition Metal Carbides (MXenes): A New Family of Promising Catalysts for the Hydrogen Evolution Reaction. <b>2018</b> , 122, 28113-28122	58
1812	Study on the Stability of CoxM <sub>3-x</sub> O <sub>4</sub> (M = Ni, Mn and Ce) Nanowire Array Electrodes for Electrochemical Oxygen Evolution at Large Current Densities. <b>2018</b> , 165, A3496-A3503	6



1811	First-principles computational approach for innovative design of highly functional electrocatalysts in fuel cells. <b>2018</b> , 12, 225-232	1
1810	Carbon-coated cobalt molybdenum oxide as a high-performance electrocatalyst for hydrogen evolution reaction. <b>2018</b> , 43, 23101-23108	6
1809	Layered Ternary and Quaternary Transition Metal Chalcogenide Based Catalysts for Water Splitting. <b>2018</b> , 8, 551	31
1808	Dynamic Workflows for Routine Materials Discovery in Surface Science. <b>2018</b> , 58, 2392-2400	26
1807	Preparation of complex model electrocatalysts in ultra-high vacuum and transfer into the electrolyte for electrochemical IR spectroscopy and other techniques. <b>2018</b> , 89, 114101	15
1806	Unraveling Metal/Pincer Ligand Effects in the Catalytic Hydrogenation of Carbon Dioxide to Formate. <b>2018</b> , 37, 4568-4575	18
1805	Guiding Electrochemical Carbon Dioxide Reduction toward Carbonyls Using Copper Silver Thin Films with Interphase Miscibility. <b>2018</b> , 3, 2947-2955	47
1804	Directing the reactivity of metal hydrides for selective CO reduction. <b>2018</b> , 115, 12686-12691	63
1803	Enabling Electrocatalytic N <sub>2</sub> Reduction to NH <sub>3</sub> by Y <sub>2</sub> O <sub>3</sub> Nanosheet under Ambient Conditions. <b>2018</b> , 57, 16622-16627	28
1802	Tuning the Hydrogen Evolution Reaction on Metals by Lithium Salt. <b>2018</b> , 1, 7116-7122	7
1801	Porous CoO-CeO <sub>2</sub> heterostructures as highly active and stable electrocatalysts for water oxidation. <b>2018</b> , 43, 22529-22537	22
1800	Nanostructured Bromide-Derived Ag Film: An Efficient Electrocatalyst for N Reduction to NH under Ambient Conditions. <b>2018</b> , 57, 14692-14697	22
1799	Impact of nanoparticle size and lattice oxygen on water oxidation on NiFeOxHy. <b>2018</b> , 1, 820-829	212
1798	Ultranarrow Graphene Nanoribbons toward Oxygen Reduction and Evolution Reactions. <b>2018</b> , 5, 1801375	41
1797	Structurally Engineered Hyperbranched NiCoP Arrays with Superior Electrocatalytic Activities toward Highly Efficient Overall Water Splitting. <b>2018</b> , 10, 41237-41245	70
1796	Electrochemical Corrosion Engineering for Ni-Fe Oxides with Superior Activity toward Water Oxidation. <b>2018</b> , 10, 42217-42224	25
1795	Exploration of nanowire- and nanotube-based electrocatalysts for oxygen reduction and oxygen evolution reaction. <b>2018</b> , 3, 54-68	21
1794	Enhanced oxygen reduction with single-atomic-site iron catalysts for a zinc-air battery and hydrogen-air fuel cell. <b>2018</b> , 9, 5422	431

1793	Heterointerface engineering of trilayer-shelled ultrathin MoS <sub>2</sub> /MoP/N-doped carbon hollow nanobubbles for efficient hydrogen evolution. <b>2018</b> , 6, 24783-24792	54
1792	Polyoxometalate-Derived Hexagonal Molybdenum Nitrides (MXenes) Supported by Boron, Nitrogen Codoped Carbon Nanotubes for Efficient Electrochemical Hydrogen Evolution from Seawater. <b>2018</b> , 29, 1805893	31
1791	Electron Correlations Engineer Catalytic Activity of Pyrochlore Iridates for Acidic Water Oxidation. <b>2019</b> , 31, e1805104	36
1790	Electrochemical Reduction of CO <sub>2</sub> over Heterogeneous Catalysts in Aqueous Solution: Recent Progress and Perspectives. <b>2018</b> , 3, 1800369	74
1789	Oxygen Evolution Reaction Catalyzed by Cost-Effective Metal Oxides. <b>2018</b> , 785-795	1
1788	Pt-C Interfaces Based on Electronegativity-Functionalized Hollow Carbon Spheres for Highly Efficient Hydrogen Evolution. <b>2018</b> , 10, 43561-43569	22
1787	Efficient oxygen evolution electrocatalysis in acid by a perovskite with face-sharing IrO octahedral dimers. <b>2018</b> , 9, 5236	193
1786	Theoretical Approaches to Describing the Oxygen Reduction Reaction Activity of Single-Atom Catalysts. <b>2018</b> , 122, 29307-29318	39
1785	Single-Crystal Nitrogen-Rich Two-Dimensional MoN Nanosheets for Efficient and Stable Seawater Splitting. <b>2018</b> , 12, 12761-12769	171
1784	Modulating the Volmer Step by MOF Derivatives Assembled with Heterogeneous Ni <sub>2</sub> P-CoP Nanocrystals in Alkaline Hydrogen Evolution Reaction. <b>2018</b> , 165, F1286-F1291	11
1783	Enhanced Electrocatalytic Activity and Stability toward the Oxygen Reduction Reaction with Unprotected Pt Nanoclusters. <b>2018</b> , 8,	8
1782	MOFs-derived hybrid nanosheet arrays of nitrogen-rich CoS <sub>2</sub> and nitrogen-doped carbon for efficient hydrogen evolution in both alkaline and acidic media. <b>2018</b> , 43, 23319-23326	11
1781	Effects of Metal-Doping on Hydrogen Evolution Reaction Catalyzed by MAu and MAu Nanoclusters (M = Pt, Pd). <b>2018</b> , 10, 44645-44653	57
1780	Revealing Activity Trends of Metal Diborides Toward pH-Universal Hydrogen Evolution Electrocatalysts with Pt-Like Activity. <b>2018</b> , 9, 1803369	49
1779	Understanding heterogeneous electrocatalytic carbon dioxide reduction through operando techniques. <b>2018</b> , 1, 922-934	318
1778	Nanosponge Pt Modified Graphene Nanocomposites Using Silicon Monoxides as a Reducing Agent: High Efficient Electrocatalysts for Hydrogen Evolution. <b>2018</b> , 6, 15238-15244	9
1777	3D Architectures of Quaternary Co-Ni-S-P/Graphene Hybrids as Highly Active and Stable Bifunctional Electrocatalysts for Overall Water Splitting. <b>2018</b> , 8, 1802319	87
1776	Constructing Successive Active Sites for Metal-free Electrocatalyst with Boosted Electrocatalytic Activities Toward Hydrogen Evolution and Oxygen Reduction Reactions. <b>2018</b> , 10, 5194-5200	22

1775	First-Principles Modeling in Heterogeneous Electrocatalysis. <b>2018</b> , 8, 424	18
1774	Combined Electron and Structure Manipulation on Fe-Containing N-Doped Carbon Nanotubes To Boost Bifunctional Oxygen Electrocatalysis. <b>2018</b> , 10, 35888-35895	63
1773	A three-dimensional nickel-chromium layered double hydroxide micro/nanosheet array as an efficient and stable bifunctional electrocatalyst for overall water splitting. <b>2018</b> , 10, 19484-19491	111
1772	Rationally designed metal nanocluster for electrocatalytic hydrogen production from water. <b>2018</b> , 6, 19495-19501	25
1771	Synthesis of transition metal sulfide and reduced graphene oxide hybrids as efficient electrocatalysts for oxygen evolution reactions. <b>2018</b> , 5, 180927	10
1770	High selectivity PtRh/RGO catalysts for ethanol electro-oxidation at low potentials: Enhancing the efficiency of CO <sub>2</sub> from alcoholic groups. <b>2018</b> , 292, 208-216	29
1769	Graphdiyne Electrocatalyst. <b>2018</b> , 2, 1396-1398	13
1768	Palladium Phosphide as a Stable and Efficient Electrocatalyst for Overall Water Splitting. <b>2018</b> , 57, 14862-14867	58
1767	Layered Trichalcogenidophosphate: A New Catalyst Family for Water Splitting. <b>2018</b> , 10, 67	44
1766	Constructing tunable dual active sites on two-dimensional C <sub>3</sub> N <sub>4</sub> @MoN hybrid for electrocatalytic hydrogen evolution. <b>2018</b> , 53, 690-697	126
1765	Palladium Phosphide as a Stable and Efficient Electrocatalyst for Overall Water Splitting. <b>2018</b> , 130, 15078-15083	83
1764	A bifunctional and stable Ni <sub>10</sub> Co <sub>5</sub> /Ni <sub>10</sub> P bistratal electrocatalyst for 10.8%-efficient overall solar water splitting. <b>2018</b> , 6, 20297-20303	28
1763	Mechanistic Insight into Formate Production via CO <sub>2</sub> Reduction in Co Coupled Carbon Nanotube Molecular Junctions. <b>2018</b> , 122, 23385-23392	5
1762	Quantifying Confidence in DFT-Predicted Surface Pourbaix Diagrams of Transition-Metal Electrode-Electrolyte Interfaces. <b>2018</b> , 34, 12259-12269	33
1761	Ni <sub>10</sub> Co <sub>5</sub> Be Alloy Nanocrystals: Influence of the Composition on Their in Situ Transformation and Electrocatalytic Activity for the Oxygen Evolution Reaction. <b>2018</b> , 1, 5753-5762	18
1760	Fabrication of Single-Atom Catalysts with Precise Structure and High Metal Loading. <b>2018</b> , 30, e1801649	149
1759	Morphology-Controlled Synthesis of Co <sub>3</sub> O <sub>4</sub> Materials and its Electrochemical Catalytic Properties Towards Oxygen Evolution Reaction. <b>2018</b> , 148, 3771-3778	9
1758	Tailoring manganese oxide with atomic precision to increase surface site availability for oxygen reduction catalysis. <b>2018</b> , 9, 4034	30

1757	Energetic Span as a Rate-Determining Term for Electrocatalytic Volcanos. <b>2018</b> , 8, 10590-10598	39
1756	Metal-Free Single Atom Catalyst for N Fixation Driven by Visible Light. <b>2018</b> , 140, 14161-14168	460
1755	Electrochemical Energy Conversion and Storage with Zeolitic Imidazolate Framework Derived Materials: A Perspective. <b>2018</b> , 5, 3571-3588	31
1754	Open hollow CoPt clusters embedded in carbon nanoflake arrays for highly efficient alkaline water splitting. <b>2018</b> , 6, 20214-20223	29
1753	Co O /Fe Co P Interface Nanowire for Enhancing Water Oxidation Catalysis at High Current Density. <b>2018</b> , 30, e1803551	115
1752	Origins of high onset overpotential of oxygen reduction reaction at Pt-based electrocatalysts: A mini review. <b>2018</b> , 96, 71-76	26
1751	Turning Carbon Atoms into Highly Active Oxygen Reduction Reaction Electrocatalytic Sites in Nitrogen-Doped Graphene-Coated Co@Ag. <b>2018</b> , 6, 14033-14041	7
1750	Mesoporous S doped Fe-N-C materials as highly active oxygen reduction reaction catalyst. <b>2018</b> , 54, 12073-12076	36
1749	Sharp Cu@Sn nanocones on Cu foam for highly selective and efficient electrochemical reduction of CO <sub>2</sub> to formate. <b>2018</b> , 6, 19621-19630	52
1748	Energy Trends in Adsorption at Surfaces. <b>2018</b> , 1-20	
1747	Bimetallic Hofmann-Type MetalOrganic Framework Nanoparticles for Efficient Electrocatalysis of Oxygen Evolution Reaction. <b>2018</b> ,	14
1746	Transition metal modification and carbon vacancy promoted Cr <sub>2</sub> CO <sub>2</sub> (MXenes): a new opportunity for a highly active catalyst for the hydrogen evolution reaction. <b>2018</b> , 6, 20956-20965	48
1745	Linking Molybdenum-Sulfur Clusters for Electrocatalytic Hydrogen Evolution. <b>2018</b> , 140, 13618-13622	57
1744	The Atomic Circus: Small Electron Beams Spotlight Advanced Materials Down to the Atomic Scale. <b>2018</b> , 30, e1802402	26
1743	Reaction Mechanisms of Well-Defined MetalN <sub>4</sub> Sites in Electrocatalytic CO <sub>2</sub> Reduction. <b>2018</b> , 130, 16577-16586	36
1742	Reaction Mechanisms of Well-Defined Metal-N Sites in Electrocatalytic CO Reduction. <b>2018</b> , 57, 16339-16342	216
1741	Ce-Directed Double-Layered Nanosheet Architecture of NiFe-Based Hydroxide as Highly Efficient Water Oxidation Electrocatalyst. <b>2018</b> , 6, 15411-15418	17
1740	Oriented electron transmission in polyoxometalate-metalloporphyrin organic framework for highly selective electroreduction of CO. <b>2018</b> , 9, 4466	221

1739	Cobalt-Iron Oxide Nanoarrays Supported on Carbon Fiber Paper with High Stability for Electrochemical Oxygen Evolution at Large Current Densities. <b>2018</b> , 10, 39809-39818	43
1738	Identification of Facet-Governing Reactivity in Hematite for Oxygen Evolution. <b>2018</b> , 30, e1804341	61
1737	Encapsulating Iridium Nanoparticles Inside a 3D Cage-Like Organic Network as an Efficient and Durable Catalyst for the Hydrogen Evolution Reaction. <b>2018</b> , 30, e1805606	69
1736	Novel Cobalt-Doped NiSe Chalcogenides (Co NiSe) as High Active and Stable Electrocatalysts for Hydrogen Evolution Reaction in Electrolysis Water Splitting. <b>2018</b> , 10, 40491-40499	58
1735	g-C <sub>3</sub> N <sub>4</sub> /CeO <sub>2</sub> /Fe <sub>3</sub> O <sub>4</sub> Ternary Composite as an Efficient Bifunctional Catalyst for Overall Water Splitting. <b>2018</b> , 10, 5587-5592	17
1734	Surface Modulation of Hierarchical MoS <sub>2</sub> Nanosheets by Ni Single Atoms for Enhanced Electrocatalytic Hydrogen Evolution. <b>2018</b> , 28, 1807086	237
1733	Tuning Sulfur Doping for Bifunctional Electrocatalyst with Selectivity between Oxygen and Hydrogen Evolution. <b>2018</b> , 1, 5822-5829	12
1732	Magnetic and electrocatalytic properties of transition metal doped MoS <sub>2</sub> nanocrystals. <b>2018</b> , 124, 153903	26
1731	Interfacial and Dimensional Effects of Pd Co-Catalyst for Efficient Photocatalytic Hydrogen Generation. <b>2018</b> , 122, 25165-25173	21
1730	Oxygen Evolution Reaction on Nitrogen-Doped Defective Carbon Nanotubes and Graphene. <b>2018</b> , 122, 25882-25892	46
1729	Application of differential resonant high-energy X-ray diffraction to three-dimensional structure studies of nanosized materials: A case study of Pt-Pd nanoalloy catalysts. <b>2018</b> , 74, 553-566	6
1728	Self-Assembly-Induced Mosslike Fe <sub>2</sub> O <sub>3</sub> and FeP on Electro-oxidized Carbon Paper for Low-Voltage-Driven Hydrogen Production Plus Hydrazine Degradation. <b>2018</b> , 6, 15727-15736	17
1727	Defect Engineering of Cobalt-Based Materials for Electrocatalytic Water Splitting. <b>2018</b> , 6, 15954-15969	107
1726	Trimetallic Sulfide Mesoporous Nanospheres as Superior Electrocatalysts for Rechargeable Zn/Air Batteries. <b>2018</b> , 8, 1801839	69
1725	Hollow Bimetallic Zinc Cobalt Phosphosulfides for Efficient Overall Water Splitting. <b>2019</b> , 25, 621-626	9
1724	Stabilizing and Activating Metastable Nickel Nanocrystals for Highly Efficient Hydrogen Evolution Electrocatalysis. <b>2018</b> , 12, 11625-11631	32
1723	Semi-synthetic strategy. <b>2018</b> , 3, 921-922	5
1722	Intercalation of Li <sup>+</sup> into a Co-Containing Steel-Ceramic Composite: Substantial Oxygen Evolution at Almost Zero Overpotential. <b>2018</b> , 8, 10914-10925	14

1721	Serpentine Ni Ge O (OH) Nanosheets with Tailored Layers and Size for Efficient Oxygen Evolution Reactions. <b>2018</b> , 14, e1803015	15
1720	Microwave annealing promoted in-situ electrochemical activation of Ni <sub>3</sub> S <sub>2</sub> nanowires for water electrolysis. <b>2018</b> , 368, 112-119	12
1719	Structural Self-Reconstruction of Catalysts in Electrocatalysis. <b>2018</b> , 51, 2968-2977	156
1718	Interfacing nickel nitride and nickel boosts both electrocatalytic hydrogen evolution and oxidation reactions. <b>2018</b> , 9, 4531	241
1717	Sn-NiS Ultrathin Nanosheets as Efficient Bifunctional Water-Splitting Catalysts with a Large Current Density and Low Overpotential. <b>2018</b> , 10, 40568-40576	63
1716	Ir/g-CN/Nitrogen-Doped Graphene Nanocomposites as Bifunctional Electrocatalysts for Overall Water Splitting in Acidic Electrolytes. <b>2018</b> , 10, 39161-39167	42
1715	Large-Scale Synthesis of Co/CoO <sub>x</sub> Encapsulated in Nitrogen-, Oxygen-, and Sulfur-Tridoped Three-Dimensional Porous Carbon as Efficient Electrocatalysts for Hydrogen Evolution Reaction. <b>2018</b> , 1, 6250-6259	13
1714	Unlocking Bifunctional Electrocatalytic Activity for CO <sub>2</sub> Reduction Reaction by Win-Win MetalOxide Cooperation. <b>2018</b> , 3, 2816-2822	45
1713	Interplay between Covalent and Noncovalent Interactions in Electrocatalysis. <b>2018</b> , 122, 26910-26921	17
1712	Ultrasml Ru/Cu-doped RuO Complex Embedded in Amorphous Carbon Skeleton as Highly Active Bifunctional Electrocatalysts for Overall Water Splitting. <b>2018</b> , 14, e1803009	104
1711	Engineering porosity into trimetallic PtPdNi nanospheres for enhanced electrocatalytic oxygen reduction activity. <b>2018</b> , 3, 352-359	11
1710	Progress toward Commercial Application of Electrochemical Carbon Dioxide Reduction. <b>2018</b> , 4, 2571-2586	249
1709	Epitaxial Growth Modulation of Hollow Topologies for High-Performance Electrocatalysts. <b>2018</b> , 4, 2015-2017	3
1708	Diabatic model for electrochemical hydrogen evolution based on constrained DFT configuration interaction. <b>2018</b> , 149, 104702	8
1707	Co-Mo-P Based Electrocatalyst for Superior Reactivity in the Alkaline Hydrogen Evolution Reaction. <b>2018</b> , 10, 4832-4837	19
1706	Template-Directed Growth of Bimetallic Prussian Blue-Analogue Nanosheet Arrays and Their Derived Porous Metal Oxides for Oxygen Evolution Reaction. <b>2018</b> , 11, 3708-3713	24
1705	Group-VIII transition metal boride as promising hydrogen evolution reaction catalysts. <b>2018</b> , 20, 27752-27757	11
1704	Tunable nano-interfaces between MnO <sub>x</sub> and layered double hydroxides boost oxygen evolving electrocatalysis. <b>2018</b> , 6, 21918-21926	21

1703	Nanodots of transition metal (Mo and W) disulfides grown on NiNi Prussian blue analogue nanoplates for efficient hydrogen production. <b>2018</b> , 54, 11044-11047	11
1702	Metal-organic frameworks and their derivatives as bifunctional electrocatalysts. <b>2018</b> , 376, 430-448	125
1701	Multimetallic Hollow Mesoporous Nanospheres with Synergistically Structural and Compositional Effects for Highly Efficient Ethanol Electrooxidation. <b>2018</b> , 4, 1412-1419	69
1700	High-Performance Electrochemical CO <sub>2</sub> Reduction Cells Based on Non-noble Metal Catalysts. <b>2018</b> , 3, 2527-2532	62
1699	Ag nanosheets for efficient electrocatalytic N fixation to NH <sub>3</sub> under ambient conditions. <b>2018</b> , 54, 11427-11430	185
1698	Boosted Electrocatalytic N <sub>2</sub> Reduction to NH <sub>3</sub> by Defect-Rich MoS <sub>2</sub> Nanoflower. <b>2018</b> , 8, 1801357	371
1697	Anthocephalus cadamba shaped FeNi encapsulated carbon nanostructures for metal-air batteries as a resilient bifunctional oxygen electrocatalyst. <b>2018</b> , 6, 20411-20420	46
1696	Electrochemically in situ controllable assembly of hierarchically-ordered and integrated inorganic-carbon hybrids for efficient hydrogen evolution. <b>2018</b> , 5, 1194-1203	21
1695	Exploring Indium-Based Ternary Thiospinel as Conceivable High-Potential Air-Cathode for Rechargeable Zn-Air Batteries. <b>2018</b> , 8, 1802263	164
1694	N,S-Atom-coordinated CoS trinary dopants within a porous graphene framework as efficient catalysts for oxygen reduction/evolution reactions. <b>2018</b> , 47, 14992-15001	27
1693	General Construction of Molybdenum-Based Nanowire Arrays for pH-Universal Hydrogen Evolution Electrocatalysis. <b>2018</b> , 28, 1804600	95
1692	Reactivity of Amorphous Carbon Surfaces: Rationalizing the Role of Structural Motifs in Functionalization Using Machine Learning. <b>2018</b> , 30, 7446-7455	49
1691	Alkaline Water Electrolysis by NiZn-Double Hydroxide-Derived Porous Nickel Selenide-Nitrogen-Doped Graphene Composite. <b>2018</b> ,	6
1690	Template Electro-Etching-Mediated FeOOH Nanotubes as Highly Efficient Photoactive Electrocatalysts for Oxygen Evolution Reaction. <b>2018</b> ,	3
1689	Redox-Mediator-Assisted Electrocatalytic Hydrogen Evolution from Water by a Molybdenum Sulfide-Functionalized Metal-Organic Framework. <b>2018</b> , 8, 9848-9858	73
1688	Active learning across intermetallics to guide discovery of electrocatalysts for CO <sub>2</sub> reduction and H <sub>2</sub> evolution. <b>2018</b> , 1, 696-703	285
1687	Insight into the adsorption of a liquid organic hydrogen carrier, perhydro-dibenzyltoluene (= , , ), on Pt, Pd and PtPd planar surfaces.. <b>2018</b> , 8, 31895-31904	23
1686	Highly dispersed cobalt decorated uniform nitrogen doped graphene derived from polydopamine positioning metal-organic frameworks for highly efficient electrochemical water oxidation. <b>2018</b> , 289, 139-148	7

1685	Mesoporous Pd@Ru Core-Shell Nanorods for Hydrogen Evolution Reaction in Alkaline Solution. <b>2018</b> , 10, 34147-34152	48
1684	Promoting Oxygen Reduction Reaction Activity of FeN/C Electrocatalysts by Silica-Coating-Mediated Synthesis for Anion-Exchange Membrane Fuel Cells. <b>2018</b> , 30, 6684-6701	69
1683	Fe <sub>2</sub> O <sub>3</sub> -N-doped Honeycomb-like Porous Carbon Derived from Nature Silk Sericin as Electrocatalysts for Oxygen Evolution Reaction. <b>2018</b> , 644, 1103-1107	111
1682	Powering Up the Oxygen Reduction Reaction through the Integration of O <sub>2</sub> -Adsorbing Metal-Organic Frameworks on Nanocomposite Electrodes. <b>2018</b> ,	5
1681	C <sub>2</sub> N <sub>x</sub> O <sub>1-x</sub> framework carbons with defined microporosity and Co-doped functional pores. <b>2018</b> , 6, 19013-19019	8
1680	Doping-induced phase transition enables better electrocatalysts. <b>2018</b> , 61, 1623-1624	2
1679	Modulating Electronic Structure of Metal-Organic Framework for Efficient Electrocatalytic Oxygen Evolution. <b>2018</b> , 8, 1801564	178
1678	A Porous Pyrochlore Y <sub>2</sub> [Ru <sub>1.6</sub> Y <sub>0.4</sub> ]O <sub>7</sub> Electrocatalyst for Enhanced Performance towards the Oxygen Evolution Reaction in Acidic Media. <b>2018</b> , 130, 14073-14077	23
1677	Atomically-defined model catalysts in ultrahigh vacuum and in liquid electrolytes: particle size-dependent CO adsorption on Pt nanoparticles on ordered CoO(111) films. <b>2018</b> , 20, 23702-23716	9
1676	Establishing new scaling relations on two-dimensional MXenes for CO <sub>2</sub> electroreduction. <b>2018</b> , 6, 21885-21890	5
1675	A Porous Pyrochlore Y <sub>2</sub> [Ru <sub>1.6</sub> Y <sub>0.4</sub> ]O <sub>7</sub> Electrocatalyst for Enhanced Performance towards the Oxygen Evolution Reaction in Acidic Media. <b>2018</b> , 57, 13877-13881	58
1674	Recent Advances in Materials and Design of Electrochemically Rechargeable Zinc-Air Batteries. <b>2018</b> , 14, e1801929	120
1673	Surface and Near-Surface Engineering of PtCo Nanowires at Atomic Scale for Enhanced Electrochemical Sensing and Catalysis. <b>2018</b> , 30, 6660-6667	22
1672	Iridium-Tungsten Alloy Nanodendrites as pH-Universal Water-Splitting Electrocatalysts. <b>2018</b> , 4, 1244-1252	123
1671	Edge-Site Engineering of Atomically Dispersed Fe-N by Selective C-N Bond Cleavage for Enhanced Oxygen Reduction Reaction Activities. <b>2018</b> , 140, 11594-11598	411
1670	Polyoxometalate-based metal-organic framework loaded with an ultra-low amount of Pt as an efficient electrocatalyst for hydrogen production. <b>2018</b> , 20, 5387-5394	10
1669	Electrochemical Ammonia Synthesis via Nitrogen Reduction Reaction on a MoS <sub>2</sub> Catalyst: Theoretical and Experimental Studies. <b>2018</b> , 30, e1800191	524
1668	The Functionality of Surface Hydroxy Groups on the Selectivity and Activity of Carbon Dioxide Reduction over Cuprous Oxide in Aqueous Solutions. <b>2018</b> , 130, 7850-7854	18



1667	Cobalt carbonate hydroxide mesostructure with high surface area for enhanced electrocatalytic oxygen evolution. <b>2018</b> , 43, 9635-9643	12
1666	CoSe /MoSe Heterostructures with Enriched Water Adsorption/Dissociation Sites towards Enhanced Alkaline Hydrogen Evolution Reaction. <b>2018</b> , 24, 11158-11165	55
1665	Nitrogen-Doped CoP Electrocatalysts for Coupled Hydrogen Evolution and Sulfur Generation with Low Energy Consumption. <b>2018</b> , 30, e1800140	224
1664	Making Ag Present Pt-like Activity for Hydrogen Evolution Reaction. <b>2018</b> , 6, 8285-8290	20
1663	Lithiation-induced amorphization of Pd <sub>3</sub> P <sub>2</sub> S <sub>8</sub> for highly efficient hydrogen evolution. <b>2018</b> , 1, 460-468	153
1662	Slat templated formation of efficient oxygen reduction electrocatalyst with a fluidic precursor. <b>2018</b> , 5, 055510	
1661	Mo-Triggered amorphous Ni <sub>3</sub> S <sub>2</sub> nanosheets as efficient and durable electrocatalysts for water splitting. <b>2018</b> , 2, 1462-1466	30
1660	Electrical and structural engineering of cobalt selenide nanosheets by Mn modulation for efficient oxygen evolution. <b>2018</b> , 236, 569-575	82
1659	Activating rhodium phosphide-based catalysts for the pH-universal hydrogen evolution reaction. <b>2018</b> , 10, 12407-12412	68
1658	Highly efficient hydrogen evolution triggered by a multi-interfacial Ni/WC hybrid electrocatalyst. <b>2018</b> , 11, 2114-2123	142
1657	Oxygen Evolution Reaction Kinetic Barriers on Nitrogen-Doped Carbon Nanotubes. <b>2018</b> , 122, 12892-12899	16
1656	Ultrathin Transition Metal Dichalcogenide/3d Metal Hydroxide Hybridized Nanosheets to Enhance Hydrogen Evolution Activity. <b>2018</b> , 30, e1801171	134
1655	Metal-Organic Framework Hybrid-Assisted Formation of Co O /Co-Fe Oxide Double-Shelled Nanoboxes for Enhanced Oxygen Evolution. <b>2018</b> , 30, e1801211	287
1654	A Review of Electrocatalytic Reduction of Dinitrogen to Ammonia under Ambient Conditions. <b>2018</b> , 8, 1800369	619
1653	Self-Limited on-Site Conversion of MoO <sub>3</sub> Nanodots into Vertically Aligned Ultrasmall Monolayer MoS <sub>2</sub> for Efficient Hydrogen Evolution. <b>2018</b> , 8, 1800734	92
1652	Building block nanoparticles engineering induces multi-element perovskite hollow nanofibers structure evolution to trigger enhanced oxygen evolution. <b>2018</b> , 279, 301-310	13
1651	Oxygenates from the Electrochemical Reduction of Carbon Dioxide. <b>2018</b> , 13, 1992	8
1650	Engineering the Interfaces of Superadsorbing Graphene-Based Electrodes with Gas and Electrolyte to Boost Gas Evolution and Activation Reactions. <b>2018</b> , 11, 2306-2309	14

1649	Surface Polarons Reducing Overpotentials in the Oxygen Evolution Reaction. <b>2018</b> , 8, 5847-5851	27
1648	Standards and Protocols for Data Acquisition and Reporting for Studies of the Electrochemical Reduction of Carbon Dioxide. <b>2018</b> , 8, 6560-6570	160
1647	Plasmon-Mediated Electrocatalysis for Sustainable Energy: From Electrochemical Conversion of Different Feedstocks to Fuel Cell Reactions. <b>2018</b> , 3, 1415-1433	49
1646	Enhancing Oxygen Evolution Electrocatalysis via the Intimate Hydroxide-Oxide Interface. <b>2018</b> , 12, 6245-6251	96
1645	PPy enhanced Fe, W Co-doped Co <sub>3</sub> O <sub>4</sub> free-standing electrode for highly-efficient oxygen evolution reaction. <b>2018</b> , 48, 1189-1195	0
1644	O-, N-Atoms-Coordinated Mn Cofactors within a Graphene Framework as Bioinspired Oxygen Reduction Reaction Electrocatalysts. <b>2018</b> , 30, e1801732	165
1643	A Hybrid Co Quaterpyridine Complex/Carbon Nanotube Catalytic Material for CO <sub>2</sub> Reduction in Water. <b>2018</b> , 130, 7895-7899	15
1642	2D Assembly of Confined Space toward Enhanced CO <sub>2</sub> Electroreduction. <b>2018</b> , 8, 1801230	35
1641	Materials Nanoarchitectonics for Mechanical Tools in Chemical and Biological Sensing. <b>2018</b> , 13, 3366-3377	34
1640	A 3D electrode of core@shell branched nanowire TiN@Ni <sub>0.27</sub> Co <sub>2.73</sub> O <sub>4</sub> arrays for enhanced oxygen evolution reaction. <b>2018</b> , 12, 276-282	9
1639	Recent progress in single-atom electrocatalysts: concept, synthesis, and applications in clean energy conversion. <b>2018</b> , 6, 14025-14042	160
1638	Defect Engineering Metal-Free Polymeric Carbon Nitride Electrocatalyst for Effective Nitrogen Fixation under Ambient Conditions. <b>2018</b> , 130, 10403-10407	86
1637	Defect Engineering Metal-Free Polymeric Carbon Nitride Electrocatalyst for Effective Nitrogen Fixation under Ambient Conditions. <b>2018</b> , 57, 10246-10250	456
1636	In Situ Time-Resolved X-ray Absorption Fine Structure and Small Angle X-ray Scattering Revealed an Unexpected Phase Structure Transformation during the Growth of Nickel Phosphide Nanoparticles. <b>2018</b> , 122, 16397-16405	4
1635	First-principles design of bifunctional oxygen reduction and evolution catalysts through bimetallic centers in metal-organic frameworks. <b>2018</b> , 8, 3666-3674	13
1634	Pomegranate-like molybdenum phosphide@phosphorus-doped carbon nanospheres coupled with carbon nanotubes for efficient hydrogen evolution reaction. <b>2018</b> , 139, 234-240	41
1633	A Highly Effective, Stable Oxygen Evolution Catalyst Derived from Transition Metal Selenides and Phosphides. <b>2018</b> , 35, 1800135	16
1632	Metal Surface and Interface Energy Electrocatalysis: Fundamentals, Performance Engineering, and Opportunities. <b>2018</b> , 4, 2054-2083	140

1631	A porous Zn cathode for Li <sub>2</sub> O <sub>2</sub> batteries generating fuel-gas CO. <b>2018</b> , 6, 13952-13958	37
1630	Boosting fuel cell catalysis by surface doping of W on Pd nanocubes. <b>2018</b> , 39, 1202-1209	10
1629	Tracking Metal Electrodeposition Dynamics from Nucleation and Growth of a Single Atom to a Crystalline Nanoparticle. <b>2018</b> , 12, 7388-7396	47
1628	Suppression of Hydrogen Evolution Reaction in Electrochemical N <sub>2</sub> Reduction Using Single-Atom Catalysts: A Computational Guideline. <b>2018</b> , 8, 7517-7525	333
1627	Electrochemical N fixation to NH <sub>3</sub> under ambient conditions: MoN nanorod as a highly efficient and selective catalyst. <b>2018</b> , 54, 8474-8477	224
1626	ACo <sub>2</sub> O <sub>4</sub> (A=Ni, Zn, Mn) nanostructure arrays grown on nickel foam as efficient electrocatalysts for oxygen evolution reaction. <b>2018</b> , 43, 14360-14368	22
1625	[Mo <sub>3</sub> S <sub>13</sub> ] <sub>2</sub> Cluster Decorated Sulfur-doped Reduced Graphene Oxide as Noble Metal-Free Catalyst for Hydrogen Evolution Reaction in Polymer Electrolyte Membrane Electrolyzers. <b>2018</b> , 5, 2672-2680	9
1624	Two-Dimensional Metal Nanomaterials: Synthesis, Properties, and Applications. <b>2018</b> , 118, 6409-6455	467
1623	Improving Electrocatalysts for Oxygen Evolution Using Ni <sub>3</sub> Fe <sub>3</sub> O <sub>4</sub> /Ni Hybrid Nanostructures Formed by Solvothermal Synthesis. <b>2018</b> , 3, 1698-1707	91
1622	MoO <sub>3</sub> nanosheets for efficient electrocatalytic N <sub>2</sub> fixation to NH <sub>3</sub> . <b>2018</b> , 6, 12974-12977	227
1621	Boosting interfacial charge transfer for efficient water-splitting photoelectrodes: progress in bismuth vanadate photoanodes using various strategies. <b>2018</b> , 8, 809-822	8
1620	Optimizing edges and defects of supported MoS <sub>2</sub> catalysts for hydrogen evolution via an external electric field. <b>2018</b> , 20, 26083-26090	19
1619	Pyridinic-N-dominated carbon frameworks with porous tungsten trioxide nano-lamellae as a promising bi-functional catalyst for Li-oxygen batteries. <b>2018</b> , 10, 15763-15770	19
1618	Single-Phase Pyrochlore Y <sub>2</sub> Ir <sub>2</sub> O <sub>7</sub> Electrocatalyst on the Activity of Oxygen Evolution Reaction. <b>2018</b> , 1, 3992-3998	34
1617	Surface Sulfurization of NiCo-Layered Double Hydroxide Nanosheets Enable Superior and Durable Oxygen Evolution Electrocatalysis. <b>2018</b> , 1, 4040-4049	45
1616	Trends in Activity and Dissolution on RuO <sub>2</sub> under Oxygen Evolution Conditions: Particles versus Well-Defined Extended Surfaces. <b>2018</b> , 3, 2045-2051	77
1615	More active sites exposed few-layer MoSe <sub>2</sub> supported on nitrogen-doped carbon as highly efficient and durable electrocatalysts for water splitting. <b>2018</b> , 285, 103-110	14
1614	Defect and pyridinic nitrogen engineering of carbon-based metal-free nanomaterial toward oxygen reduction. <b>2018</b> , 52, 307-314	114

1613	Ultrathin PtPd-Based Nanorings with Abundant Step Atoms Enhance Oxygen Catalysis. <b>2018</b> , 30, e1802136	72
1612	Electronic Structure Evolution in Tricomponent Metal Phosphides with Reduced Activation Energy for Efficient Electrocatalytic Oxygen Evolution. <b>2018</b> , 14, e1801756	52
1611	Perovskite oxide/carbon nanotube hybrid bifunctional electrocatalysts for overall water splitting. <b>2018</b> , 286, 47-54	32
1610	Dual-template engineering of triple-layered nanoarray electrode of metal chalcogenides sandwiched with hydrogen-substituted graphdiyne. <b>2018</b> , 9, 3132	60
1609	Converting sunlight to clean fuels: The challenges of artificial photosynthesis and progress at the Conn Center. <b>2018</b> ,	
1608	Atomic-level insight into super-efficient electrocatalytic oxygen evolution on iron and vanadium co-doped nickel (oxy)hydroxide. <b>2018</b> , 9, 2885	398
1607	Carbon-Rich Nanomaterials: Fascinating Hydrogen and Oxygen Electrocatalysts. <b>2018</b> , 30, e1800528	102
1606	Emerging Applications of Plasmons in Driving CO Reduction and N Fixation. <b>2018</b> , 30, e1802227	107
1605	Self-Interconnected Porous Networks of NiCo Disulfide as Efficient Bifunctional Electrocatalysts for Overall Water Splitting. <b>2018</b> , 10, 27723-27733	51
1604	Proton coupled electron transfer from Co <sub>3</sub> O <sub>4</sub> nanoparticles to photogenerated Ru(bpy) <sub>3</sub> <sup>3+</sup> : base catalysis and buffer effect. <b>2018</b> , 2, 1951-1956	10
1603	Construction of Single-Crystalline Prussian Blue Analog Hollow Nanostructures with Tailorable Topologies. <b>2018</b> , 4, 1967-1982	91
1602	Superhydrophilic Heteroporous MoS <sub>2</sub> /Ni <sub>3</sub> S <sub>2</sub> for Highly Efficient Electrocatalytic Overall Water Splitting. <b>2018</b> , 1, 3929-3936	43
1601	Design of Dual-Modified MoS <sub>2</sub> with Nanoporous Ni and Graphene as Efficient Catalysts for the Hydrogen Evolution Reaction. <b>2018</b> , 8, 8107-8114	97
1600	Sulfur-Doped Rhenium Selenide Vertical Nanosheets: A High-Performance Electrocatalyst for Hydrogen Evolution. <b>2018</b> , 10, 4424-4430	20
1599	Metal-organic-framework template-derived hierarchical porous CoP arrays for energy-saving overall water splitting. <b>2018</b> , 284, 504-512	42
1598	Metal/covalent organic frameworks-based electrocatalysts for water splitting. <b>2018</b> , 6, 15905-15926	180
1597	Tuning nitrogen reduction reaction activity via controllable Fe magnetic moment: A computational study of single Fe atom supported on defective graphene. <b>2018</b> , 284, 392-399	102
1596	Machine learning hydrogen adsorption on nanoclusters through structural descriptors. <b>2018</b> , 4,	93

1595	Engineering Two-Dimensional Mass-Transport Channels of the MoS Nanocatalyst toward Improved Hydrogen Evolution Performance. <b>2018</b> , 10, 25409-25414	17
1594	Surface-Engineered PtNi-O Nanostructure with Record-High Performance for Electrocatalytic Hydrogen Evolution Reaction. <b>2018</b> , 140, 9046-9050	258
1593	A Br <sup>-</sup> anion adsorbed porous Ag nanowire film: in situ electrochemical preparation and application toward efficient CO <sub>2</sub> electroreduction to CO with high selectivity. <b>2018</b> , 5, 2238-2241	20
1592	Electrocatalysis Beyond the Computational Hydrogen Electrode. <b>2018</b> , 1-33	6
1591	Hollow nanoparticles as emerging electrocatalysts for renewable energy conversion reactions. <b>2018</b> , 47, 8173-8202	157
1590	Cu-Doped CoP Nanorod Arrays: Efficient and Durable Hydrogen Evolution Reaction Electrocatalysts at All pH Values. <b>2018</b> , 1, 3835-3842	41
1589	Metallic and superhydrophilic nickel cobalt diselenide nanosheets electrodeposited on carbon cloth as a bifunctional electrocatalyst. <b>2018</b> , 6, 17353-17360	70
1588	Coupling confinement activating cobalt oxide ultra-small clusters for high-turnover oxygen evolution electrocatalysis. <b>2018</b> , 6, 15684-15689	21
1587	Role of cobalt-iron (oxy)hydroxide (CoFeOx) as oxygen evolution catalyst on hematite photoanodes. <b>2018</b> , 11, 2972-2984	81
1586	Atomically dispersed Au <sup>1</sup> catalyst towards efficient electrochemical synthesis of ammonia. <b>2018</b> , 63, 1246-1253	158
1585	New challenges of electrokinetic studies in investigating the reaction mechanism of electrochemical CO <sub>2</sub> reduction. <b>2018</b> , 6, 14043-14057	83
1584	Single Molybdenum Atom Anchored on N-Doped Carbon as a Promising Electrocatalyst for Nitrogen Reduction into Ammonia at Ambient Conditions. <b>2018</b> , 122, 16842-16847	163
1583	Metal-based heterogeneous electrocatalysts for reduction of carbon dioxide and nitrogen: mechanisms, recent advances and perspective. <b>2018</b> , 3, 591-625	37
1582	Machine learning meets volcano plots: computational discovery of cross-coupling catalysts. <b>2018</b> , 9, 7069-7077	118
1581	Single-Atom Catalysts: Synthetic Strategies and Electrochemical Applications. <b>2018</b> , 2, 1242-1264	1046
1580	CN-graphene supported single-atom catalysts for CO electrochemical reduction reaction: mechanistic insight and catalyst screening. <b>2018</b> , 10, 15262-15272	92
1579	In situ formation of Ni <sub>3</sub> Se <sub>4</sub> nanorod arrays as versatile electrocatalysts for electrochemical oxidation reactions in hybrid water electrolysis. <b>2018</b> , 6, 15653-15658	64
1578	Understanding Surface-Mediated Electrochemical Reactions: CO <sub>2</sub> Reduction and Beyond. <b>2018</b> , 8, 8121-8129	119

1577	Resolution of Electronic and Structural Factors Underlying Oxygen-Evolving Performance in Amorphous Cobalt Oxide Catalysts. <b>2018</b> , 140, 10710-10720	34
1576	Surface engineering of nickel selenide for an enhanced intrinsic overall water splitting ability. <b>2018</b> , 2, 1725-1731	30
1575	Quasi-single-crystalline CoO hexagrams with abundant defects for highly efficient electrocatalytic water oxidation. <b>2018</b> , 9, 6961-6968	46
1574	Partially amorphous nickel-iron layered double hydroxide nanosheet arrays for robust bifunctional electrocatalysis. <b>2018</b> , 6, 16121-16129	129
1573	Heteroatom-doped nanoporous carbon from recyclable lobata and its dual activities for oxygen reduction and hydrogen evolution reactions.. <b>2018</b> , 8, 24392-24398	
1572	Benchmarking Semiempirical Methods To Compute Electrochemical Formal Potentials. <b>2018</b> , 122, 6809-6818	9
1571	Probing the nucleation, growth, and evolution of hydrogen nanobubbles at single catalytic sites. <b>2018</b> , 283, 1773-1778	13
1570	Robust electrografted interfaces on metal oxides for electrocatalysis in situ spectroelectrochemical study. <b>2018</b> , 6, 15200-15212	21
1569	High-Performance Carbon Dioxide Electrocatalytic Reduction by Easily Fabricated Large-Scale Silver Nanowire Arrays. <b>2018</b> , 10, 17950-17956	35
1568	Intermetallic hcp-PtBi/fcc-Pt Core/Shell Nanoplates Enable Efficient Bifunctional Oxygen Reduction and Methanol Oxidation Electrocatalysis. <b>2018</b> , 8, 5581-5590	106
1567	Design Strategy of Multi-electron Transfer Catalysts Based on a Bioinformatic Analysis of Oxygen Evolution and Reduction Enzymes. <b>2018</b> , 37, e1700139	2
1566	Exploiting Sun Energy Effectively as a Source of Renewable Energy. <b>2018</b> , 23, 355-369	
1565	Electrocatalytic Nitrogen Reduction at Low Temperature. <b>2018</b> , 2, 846-856	292
1564	Electrochemical STM Tip-Enhanced Raman Spectroscopy Study of Electron Transfer Reactions of Covalently Tethered Chromophores on Au(111). <b>2018</b> , 122, 11586-11590	20
1563	Copper Silver Thin Films with Metastable Miscibility for Oxygen Reduction Electrocatalysis in Alkaline Electrolytes. <b>2018</b> , 1, 1990-1999	21
1562	Constructing Bridges between Computational Tools in Heterogeneous and Homogeneous Catalysis. <b>2018</b> , 8, 5637-5656	42
1561	Atomically Thin 2D Multinary Nanosheets for Energy-Related Photo, Electrocatalysis. <b>2018</b> , 5, 1800244	39
1560	Advanced perspective on the synchronized bifunctional activities of P2-type materials to implement an interconnected voltage profile for seawater batteries. <b>2018</b> , 6, 11012-11021	19

1559	DFT study on water oxidation on nitrogen-doped ceria oxide. <b>2018</b> , 452, 423-428	10
1558	Industrial computational catalysis and its relation to the digital revolution. <b>2018</b> , 1, 311-313	6
1557	Electrocatalysis. <b>2018</b> , 315-359	
1556	Fourier transformed alternating current voltammetry in electromaterials research: Direct visualisation of important underlying electron transfer processes. <b>2018</b> , 10, 72-81	20
1555	Cyclic Penta-Twinned Rhodium Nanobranches as Superior Catalysts for Ethanol Electro-oxidation. <b>2018</b> , 140, 11232-11240	80
1554	Enabling Effective Electrocatalytic N Conversion to NH <sub>3</sub> by the TiO <sub>2</sub> Nanosheets Array under Ambient Conditions. <b>2018</b> , 10, 28251-28255	174
1553	Cu nanocrystal enhancement of C <sub>3</sub> N <sub>4</sub> /Cu hetero-structures and new applications in photo-electronic catalysis: hydrazine oxidation and redox reactions of organic molecules. <b>2018</b> , 5, 2420-2424	8
1552	Effect of Intrinsic Properties of Anions on the Electrocatalytic Activity of NiCoO and NiCoO S Grown by Chemical Bath Deposition. <b>2018</b> , 3, 9066-9074	12
1551	Single Co Atoms Anchored in Porous N-Doped Carbon for Efficient Zinc-Air Battery Cathodes. <b>2018</b> , 8, 8961-8969	250
1550	Tailoring the nano heterointerface of hematite/magnetite on hierarchical nitrogen-doped carbon nanocages for superb oxygen reduction. <b>2018</b> , 6, 21313-21319	19
1549	Sharp-Tipped Zinc Nanowires as an Efficient Electrocatalyst for Carbon Dioxide Reduction. <b>2018</b> , 24, 15486-15490	11
1548	Development and applications of portable systems based on conventional PEM fuel cells. <b>2018</b> , 91-106	6
1547	Highly Dispersed Platinum on Honeycomb-like [email protected] Film as a Synergistic Electrocatalyst for the Hydrogen Evolution Reaction. <b>2018</b> , 8, 8866-8872	93
1546	Cytomembrane-Structure-Inspired Active Ni-N-O Interface for Enhanced Oxygen Evolution Reaction. <b>2018</b> , 30, e1803367	84
1545	Novel Cobalt Germanium Hydroxide for Electrochemical Water Oxidation. <b>2018</b> , 10, 30357-30366	12
1544	Hydrogen evolution reaction (HER) on Au@Ag ultrananoclusters as electro-catalysts. <b>2018</b> , 10, 17730-17737	14
1543	A high-energy-density lithium-oxygen battery based on a reversible four-electron conversion to lithium oxide. <i>Science</i> , <b>2018</b> , 361, 777-781	33-3 232
1542	Metal-organic frameworks for direct electrochemical applications. <b>2018</b> , 376, 292-318	294

1541	Heterostructures for Electrochemical Hydrogen Evolution Reaction: A Review. <b>2018</b> , 28, 1803291	514
1540	Two Novel Polyoxometalate-Encapsulated Metal-Organic Nanotube Frameworks as Stable and Highly Efficient Electrocatalysts for Hydrogen Evolution Reaction. <b>2018</b> , 10, 31498-31504	51
1539	Role of Surface Oxophilicity in Copper-Catalyzed Water Dissociation. <b>2018</b> , 8, 9327-9333	32
1538	Competition between H and CO for Active Sites Governs Copper-Mediated Electrosynthesis of Hydrocarbon Fuels. <b>2018</b> , 130, 10378-10382	13
1537	Electrocatalysts based on metal@carbon core@shell nanocomposites: An overview. <b>2018</b> , 3, 335-351	52
1536	High-performance artificial nitrogen fixation at ambient conditions using a metal-free electrocatalyst. <b>2018</b> , 9, 3485	469
1535	Integrated Hierarchical Carbon Flake Arrays with Hollow P-Doped CoSe <sub>2</sub> Nanoclusters as an Advanced Bifunctional Catalyst for Zn/Air Batteries. <b>2018</b> , 28, 1804846	126
1534	High-Performance Electrohydrogenation of N <sub>2</sub> to NH <sub>3</sub> Catalyzed by Multishelled Hollow Cr <sub>2</sub> O <sub>3</sub> Microspheres under Ambient Conditions. <b>2018</b> , 8, 8540-8544	218
1533	Layered franckeite and teallite intrinsic heterostructures: shear exfoliation and electrocatalysis. <b>2018</b> , 6, 16590-16599	14
1532	Metal/Air Batteries: From Static to Flow System. <b>2018</b> , 8, 1801396	104
1531	Nanodendrites of platinum-group metals for electrocatalytic applications. <b>2018</b> , 11, 6111-6140	33
1530	Photoinduced Oxygen Evolution Catalysis Promoted by Polyoxometalate Salts of Cationic Photosensitizers. <b>2018</b> , 6, 302	7
1529	Overall Water-Splitting Electrocatalysts Based on 2D CoNi-Metal-Organic Frameworks and Its Derivative. <b>2018</b> , 5, 1800849	43
1528	2D Metal Oxyhalide-Derived Catalysts for Efficient CO Electroreduction. <b>2018</b> , 30, e1802858	123
1527	Local Charge Distribution Engineered by Schottky Heterojunctions toward Urea Electrolysis. <b>2018</b> , 8, 1801775	142
1526	Vertically Aligned N-Doped Diamond/Graphite Hybrid Nanosheets Epitaxially Grown on B-Doped Diamond Films as Electrocatalysts for Oxygen Reduction Reaction in an Alkaline Medium. <b>2018</b> , 10, 29866-29875	10
1525	CoS <sub>2</sub> -incorporated WS <sub>2</sub> nanosheets for efficient hydrogen production. <b>2018</b> , 287, 1-9	15
1524	CO Overall Splitting by a Bifunctional Metal-Free Electrocatalyst. <b>2018</b> , 57, 13135-13139	52



1523	Coupling of Nickel Boride and Ni(OH) <sub>2</sub> Nanosheets with Hierarchical Interconnected Conductive Porous Structure Synergizes the Oxygen Evolution Reaction. <b>2018</b> , 10, 4555-4561	19
1522	On the Role of Sulfur for the Selective Electrochemical Reduction of CO to Formate on CuS Catalysts. <b>2018</b> , 10, 28572-28581	96
1521	Tailoring the Structure of Carbon Nanomaterials toward High-End Energy Applications. <b>2018</b> , 30, e1802104	65
1520	Fundamental Atomic Insight in Electrocatalysis. <b>2018</b> , 1-31	4
1519	Sub-3 nm pores in two-dimensional nanomesh promoting the generation of electroactive phase for robust water oxidation. <b>2018</b> , 53, 74-82	72
1518	Electrocatalysis with Atomically Defined Model Systems: Metal-Support Interactions between Pt Nanoparticles and Co <sub>3</sub> O <sub>4</sub> (111) under Ultrahigh Vacuum and in Liquid Electrolytes. <b>2018</b> , 122, 20787-20799	14
1517	Metal-organic framework derived leaf-like CoSNC nanocomposites for supercapacitor electrodes. <b>2018</b> , 10, 17958-17964	18
1516	CO <sub>2</sub> Overall Splitting by a Bifunctional Metal-Free Electrocatalyst. <b>2018</b> , 130, 13319-13323	14
1515	A review of the synthesis and characterization of anion exchange membranes. <b>2018</b> , 53, 11131-11150	130
1514	Hybrid 0D/2D black phosphorus quantum dots/graphitic carbon nitride nanosheets for efficient hydrogen evolution. <b>2018</b> , 50, 552-561	102
1513	Nature of Lone-Pair-Surface Bonds and Their Scaling Relations. <b>2018</b> , 57, 7222-7238	35
1512	Double Perovskites as Model Bifunctional Catalysts toward Rational Design: The Correlation between Electrocatalytic Activity and Complex Spin Configuration. <b>2018</b> , 10, 19746-19754	23
1511	Electrifying model catalysts for understanding electrocatalytic reactions in liquid electrolytes. <b>2018</b> , 17, 592-598	67
1510	Assembling Ultrasmall Copper-Doped Ruthenium Oxide Nanocrystals into Hollow Porous Polyhedra: Highly Robust Electrocatalysts for Oxygen Evolution in Acidic Media. <b>2018</b> , 30, e1801351	199
1509	Phase-Controlled Synthesis of Nickel Phosphide Nanocrystals and Their Electrocatalytic Performance for the Hydrogen Evolution Reaction. <b>2018</b> , 24, 11748-11754	34
1508	Recent advances in the precise control of isolated single-site catalysts by chemical methods. <b>2018</b> , 5, 673-689	153
1507	Plasmon-Promoted Electrochemical Oxygen Evolution Catalysis from Gold Decorated MnO <sub>2</sub> Nanosheets under Green Light. <b>2018</b> , 28, 1801573	49
1506	Ultrafine CoP <sub>x</sub> Nanoparticles Anchored on Nitrogen Doped Reduced Graphene Oxides for Superior Hydrogenation in Alkaline Media. <b>2018</b> , 5, 1800515	18

1505	Highly Active Surface Structure in Nanosized Spinel Cobalt-Based Oxides for Electrocatalytic Water Splitting. <b>2018</b> , 122, 14447-14458	12
1504	Mechanistic Insight into Enhanced Hydrogen Evolution Reaction Activity of Ultrathin Hexagonal Boron Nitride-Modified Pt Electrodes. <b>2018</b> , 8, 6636-6644	37
1503	Formation of TiBe mixed sulfide nanoboxes for enhanced electrocatalytic oxygen evolution. <b>2018</b> , 6, 21891-21895	18
1502	Electrocatalytic valorisation of biomass derived chemicals. <b>2018</b> , 8, 3216-3232	73
1501	Amine group induced high activity of highly torn amine functionalized nitrogen-doped graphene as the metal-free catalyst for hydrogen evolution reaction. <b>2018</b> , 138, 169-178	34
1500	Partially Oxidized Bimetallic Nanocrystals as Efficient Non-Noble Metal Alcohol Electrooxidation Catalysts. <b>2018</b> , 10, 3647-3652	1
1499	Tailoring Porosity in Copper-Based Multinary Sulfide Nanostructures for Energy, Biomedical, Catalytic, and Sensing Applications. <b>2018</b> , 1, 3042-3062	34
1498	Self-Supported FeNi-P Nanosheets with Thin Amorphous Layers for Efficient Electrocatalytic Water Splitting. <b>2018</b> , 6, 9640-9648	51
1497	Preparation of 2D material dispersions and their applications. <b>2018</b> , 47, 6224-6266	291
1496	The reactivity of water and OH on Pt-Ni(111) films. <b>2018</b> , 20, 16743-16748	5
1495	Metal-Organic Framework-Derived Nickel-Cobalt Sulfide on Ultrathin Mxene Nanosheets for Electrocatalytic Oxygen Evolution. <b>2018</b> , 10, 22311-22319	184
1494	A Carbon Nitride/Fe Quaterpyridine Catalytic System for Photostimulated CO-to-CO Conversion with Visible Light. <b>2018</b> , 140, 7437-7440	122
1493	Steering post-CO coupling selectivity enables high efficiency electroreduction of carbon dioxide to multi-carbon alcohols. <b>2018</b> , 1, 421-428	348
1492	Platinum Nanostructure/Nitrogen-Doped Carbon Hybrid: Enhancing its Base Media HER/HOR Activity through Bi-functionality of the Catalyst. <b>2018</b> , 11, 2388-2401	41
1491	Self-Supported Earth-Abundant Nanoarrays as Efficient and Robust Electrocatalysts for Energy-Related Reactions. <b>2018</b> , 8, 6707-6732	240
1490	Single-Atom Catalysts for Electrochemical Water Splitting. <b>2018</b> , 3, 1713-1721	198
1489	Ru2P Nanoparticle Decorated P/N-Doped Carbon Nanofibers on Carbon Cloth as a Robust Hierarchical Electrocatalyst with Platinum-Comparable Activity toward Hydrogen Evolution. <b>2018</b> , 1, 3143-3150	34
1488	Efficient visible-light-driven selective oxygen reduction to hydrogen peroxide by oxygen-enriched graphitic carbon nitride polymers. <b>2018</b> , 11, 2581-2589	226

1487	Layered double hydroxide-based core-shell nanoarrays for efficient electrochemical water splitting. <b>2018</b> , 12, 537-554	20
1486	Efficient Oxygen Reduction Reaction (ORR) Catalysts Based on Single Iron Atoms Dispersed on a Hierarchically Structured Porous Carbon Framework. <b>2018</b> , 130, 9176-9181	73
1485	Efficient Oxygen Reduction Reaction (ORR) Catalysts Based on Single Iron Atoms Dispersed on a Hierarchically Structured Porous Carbon Framework. <b>2018</b> , 57, 9038-9043	329
1484	Competition between H and CO for Active Sites Governs Copper-Mediated Electrosynthesis of Hydrocarbon Fuels. <b>2018</b> , 57, 10221-10225	79
1483	Breaking the scaling relations for oxygen reduction reaction on nitrogen-doped graphene by tensile strain. <b>2018</b> , 139, 129-136	16
1482	In-situ electrochemical activation designed hybrid electrocatalysts for water electrolysis. <b>2018</b> , 63, 853-876	76
1481	Self-Supported Hierarchical Shell@Core Ni <sub>3</sub> S <sub>2</sub> @Ni Foam Composite Electrocatalyst with High Efficiency and Long-Term Stability for Methanol Oxidation. <b>2018</b> , 5, 2376-2382	9
1480	Organic chemistry at anodes and photoanodes. <b>2018</b> , 2, 1905-1927	45
1479	Secondary-Component Incorporated Hollow MOFs and Derivatives for Catalytic and Energy-Related Applications. <b>2019</b> , 31, e1800743	88
1478	Graphdiyne-Supported NiFe Layered Double Hydroxide Nanosheets as Functional Electrocatalysts for Oxygen Evolution. <b>2019</b> , 11, 2662-2669	79
1477	Carbon-Based Electrodes and Catalysts for the Electroreduction of Carbon Dioxide (CO <sub>2</sub> ) to Value-Added Chemicals. <b>2019</b> , 219-251	7
1476	Put the Sun in the Tank: Future Developments in Sustainable Energy Systems. <b>2019</b> , 58, 343-348	21
1475	Designing hybrid materials with multifunctional interfaces for wound dressing, electrocatalysis, and chemical separation. <b>2019</b> , 533, 106-125	10
1474	Functionalization of Hollow Nanomaterials for Catalytic Applications: Nanoreactor Construction. <b>2019</b> , 31, e1800426	147
1473	The Rise of Hydrogen Peroxide as the Main Product by Metal-Free Catalysis in Oxygen Reductions. <b>2019</b> , 31, e1802920	142
1472	Recent progress in functionalized layered double hydroxides and their application in efficient electrocatalytic water oxidation. <b>2019</b> , 32, 93-104	47
1471	Electrodeposited Rhodium Phosphide with High Activity for Hydrogen Evolution Reaction in Acidic Medium. <b>2019</b> , 7, 14041-14050	14
1470	Double functionalization of N-doped carbon carved hollow nanocubes with mixed metal phosphides as efficient bifunctional catalysts for electrochemical overall water splitting. <b>2019</b> , 65, 103995	83

- 1469 Edge-Contact Geometry and Anion-Deficit Construction for Activating Ultrathin MoS on WO in the Hydrogen Evolution Reaction. **2019**, 58, 11241-11247 5
- 1468 Hierarchical Nickel Clusters Encapsulated in Ultrathin N-doped Graphitic Nanocarbon Hybrids for Effective Hydrogen Evolution Reaction. **2019**, 7, 15127-15136 15
- 1467 Synthesis of low- and high-index faceted metal (Pt, Pd, Ru, Ir, Rh) nanoparticles for improved activity and stability in electrocatalysis. **2019**, 11, 18995-19011 69
- 1466 Tuning the Electronic Structure of LaNiO through Alloying with Strontium to Enhance Oxygen Evolution Activity. **2019**, 6, 1901073 41
- 1465 One-Pot Synthesis of Highly Efficient Carbon-Supported Polyhedral Pt<sub>3</sub>Ni Alloy Nanoparticles for Oxygen Reduction Reaction. **2019**, 10, 613-620 5
- 1464 Constructing Conductive Interfaces between Nickel Oxide Nanocrystals and Polymer Carbon Nitride for Efficient Electrocatalytic Oxygen Evolution Reaction. **2019**, 29, 1904020 70
- 1463 Low Dimensional Platinum-Based Bimetallic Nanostructures for Advanced Catalysis. **2019**, 52, 3384-3396 59
- 1462 CO electrochemical catalytic reduction with a highly active cobalt phthalocyanine. **2019**, 10, 3602 163
- 1461 Role of Iron on the Structure and Stability of Ni<sub>3.2</sub>Fe/Al<sub>2</sub>O<sub>3</sub> during Dynamic CO<sub>2</sub> Methanation for P2X Applications. **2019**, 11, 5018-5021 13
- 1460 Co/Co<sub>9</sub>S<sub>8</sub> nanoparticles coupled with N,S-doped graphene-based mixed-dimensional heterostructures as bifunctional electrocatalysts for the overall oxygen electrode. **2019**, 6, 2558-2565 9
- 1459 MOF-derived formation of nickel cobalt sulfides with multi-shell hollow structure towards electrocatalytic hydrogen evolution reaction in alkaline media. **2019**, 177, 107252 31
- 1458 Novel one-step synthesis of core@shell iron/nickel alloy nanoparticles coated by carbon layers for efficient oxygen evolution reaction electrocatalysis. **2019**, 438, 226988 26
- 1457 Superaerophobic Quaternary NiCoSB Nanoparticles for Efficient Overall Water-Splitting. **2019**, 7, 14639-14646 30
- 1456 Locally-ordered PtNiPb ternary nano-pompons as efficient bifunctional oxygen reduction and methanol oxidation catalysts. **2019**, 11, 16945-16953 11
- 1455 Iron tungsten mixed composite as a robust oxygen evolution electrocatalyst. **2019**, 55, 10944-10947 16
- 1454 Distorted Inverse Spinel Nickel Cobaltite Grown on a MoS<sub>2</sub> Plate for Significantly Improved Water Splitting Activity. **2019**, 31, 7590-7600 27
- 1453 Carbon Derived from Soft Pyrolysis of a Covalent Organic Framework as a Support for Small-Sized RuO Showing Exceptionally Low Overpotential for Oxygen Evolution Reaction. **2019**, 4, 13465-13473 23
- 1452 Cation-tunable flower-like (Ni<sub>x</sub>Fe<sub>1-x</sub>)<sub>2</sub>P@graphitized carbon films as ultra-stable electrocatalysts for overall water splitting in alkaline media. **2019**, 7, 20357-20368 12

1451	Revealing Energetics of Surface Oxygen Redox from Kinetic Fingerprint in Oxygen Electrocatalysis. <b>2019</b> , 141, 13803-13811	87
1450	Facile Synthesis of IrCu Microspheres Based on Polyol Method and Study on Their Electro-Catalytic Performances to Oxygen Evolution Reaction. <b>2019</b> , 9,	8
1449	Systematic Study of the Electronic, Carbon, and N-Doping Effects of CoMn-Oxide Composites as Bifunctional Oxygen Electrocatalysts. <b>2019</b> , 123, 22130-22138	2
1448	Three-Phase Photocatalysis for the Enhanced Selectivity and Activity of CO Reduction on a Hydrophobic Surface. <b>2019</b> , 58, 14549-14555	136
1447	Correlation between RuD hybridization and the oxygen evolution reaction in ruthenate epitaxial thin films. <b>2019</b> , 3, 2867-2872	5
1446	Three-Phase Photocatalysis for the Enhanced Selectivity and Activity of CO <sub>2</sub> Reduction on a Hydrophobic Surface. <b>2019</b> , 131, 14691-14697	21
1445	Electron directed migration cooperated with thermodynamic regulation over bimetallic NiFeP/g-C <sub>3</sub> N <sub>4</sub> for enhanced photocatalytic hydrogen evolution. <b>2019</b> , 259, 118078	74
1444	First-principles design of highly-efficient earth-abundant electrocatalysts for hydrogen evolution reaction: TiF <sub>3</sub> and its analogs. <b>2019</b> , 495, 143623	6
1443	Selectivity control of CO versus HCOOH production in the visible-light-driven catalytic reduction of CO <sub>2</sub> with two cooperative metal sites. <b>2019</b> , 2, 801-808	77
1442	One-Pot Synthesis of Nanoporous Nickel Hydroxide Film as High-Performance Electrode for Asymmetric Supercapacitor. <b>2019</b> , 166, D595-D602	4
1441	An Fe-N co-doped tube-in-tube carbon nanostructure used as an efficient catalyst for the electrochemical oxygen reduction reaction. <b>2019</b> , 30, 485705	
1440	Atomic Layer Deposition of ZnO on CuO Enables Selective and Efficient Electroreduction of Carbon Dioxide to Liquid Fuels. <b>2019</b> , 131, 15178-15182	27
1439	Atomic Layer Deposition of ZnO on CuO Enables Selective and Efficient Electroreduction of Carbon Dioxide to Liquid Fuels. <b>2019</b> , 58, 15036-15040	73
1438	Pd-Ag Alloy Electrocatalysts for CO Reduction: Composition Tuning to Break the Scaling Relationship. <b>2019</b> , 11, 33074-33081	36
1437	Continuous Network of Phase-Tuned Nickel Sulfide Nanostructures for Electrocatalytic Water Splitting. <b>2019</b> , 2, 5061-5070	26
1436	Bi-metallic MOFs possessing hierarchical synergistic effects as high performance electrocatalysts for overall water splitting at high current densities. <b>2019</b> , 258, 118023	70
1435	A wood-derived hierarchically porous monolithic carbon matrix embedded with Co nanoparticles as an advanced electrocatalyst for water splitting. <b>2019</b> , 3, 2753-2762	7
1434	Carbonaceous materials for efficient electrocatalysis. <b>2019</b> , 375-394	2

1433	Construction of 2D Bi <sub>2</sub> S <sub>3</sub> /CdS Nanosheet Arrays for Enhanced Photoelectrochemical Hydrogen Evolution. <b>2019</b> , 48, 6397-6405	4
1432	Recent advances of nanoporous metal-based catalyst: synthesis, application and perspectives. <b>2019</b> , 26, 779-795	5
1431	Molybdenum-Doped Porous Cobalt Phosphide Nanosheets for Efficient Alkaline Hydrogen Evolution. <b>2019</b> , 2, 6302-6310	12
1430	A novel low-dimensional heteroatom doped Nd <sub>2</sub> O <sub>3</sub> nanostructure for enhanced electrochemical sensing of carbendazim. <b>2019</b> , 43, 14009-14019	23
1429	Monodisperse nanoparticles for catalysis and nanomedicine. <b>2019</b> , 11, 18946-18967	31
1428	Effective Strain Engineering of IrO <sub>2</sub> Toward Improved Oxygen Evolution Catalysis through a Catalyst-Support System. <b>2019</b> , 6, 4586-4594	8
1427	In Situ Generation of Bifunctional Fe-Doped MoS Nanocanopies for Efficient Electrocatalytic Water Splitting. <b>2019</b> , 58, 11202-11209	40
1426	Metal-Free B@-CN: Visible/Infrared Light-Driven Single Atom Photocatalyst Enables Spontaneous Dinitrogen Reduction to Ammonia. <b>2019</b> , 19, 6391-6399	138
1425	Screening highly active perovskites for hydrogen-evolving reaction via unifying ionic electronegativity descriptor. <b>2019</b> , 10, 3755	75
1424	In Situ Transformation of Prussian-Blue Analogue-Derived Bimetallic Carbide Nanocubes by Water Oxidation: Applications for Energy Storage and Conversion. <b>2019</b> , 26, 4052	12
1423	Electrospun Cu-Deposited Flexible Fibers as an Efficient Oxygen Evolution Reaction Electrocatalyst. <b>2019</b> , 20, 2973-2980	4
1422	Field Effect Modulation of Electrocatalytic Hydrogen Evolution at Back-Gated Two-Dimensional MoS Electrodes. <b>2019</b> , 19, 6118-6123	16
1421	Quadruple perovskite ruthenate as a highly efficient catalyst for acidic water oxidation. <b>2019</b> , 10, 3809	79
1420	In situ growth of Fe(ii)-MOF-74 nanoarrays on nickel foam as an efficient electrocatalytic electrode for water oxidation: a mechanistic study on valence engineering. <b>2019</b> , 55, 11307-11310	15
1419	Strategy to boost catalytic activity of polymeric carbon nitride: synergistic effect of controllable in situ surface engineering and morphology. <b>2019</b> , 11, 16393-16405	33
1418	Bipyridine-Assisted Assembly of Au Nanoparticles on Cu Nanowires To Enhance the Electrochemical Reduction of CO <sub>2</sub> . <b>2019</b> , 131, 14238-14241	13
1417	Remarkable improvements in the performance and stability of Si photoanodes adopting nanocrystalline NiOx electrocatalyst and stoichiometric SiO <sub>2</sub> protection. <b>2019</b> , 493, 1150-1158	4
1416	Tailoring the ORR and HER electrocatalytic performances of gold nanoparticles through metal@gand interfaces. <b>2019</b> , 7, 20425-20434	29

1415	Fluorographdiyne: A Metal-Free Catalyst for Applications in Water Reduction and Oxidation. <b>2019</b> , 131, 14035-14041	20
1414	Redox-Inert Fe <sup>3+</sup> Ions in Octahedral Sites of Co-Fe Spinel Oxides with Enhanced Oxygen Catalytic Activity for Rechargeable Zinc-Air Batteries. <b>2019</b> , 131, 13425-13430	83
1413	Intermediate Modulation on Noble Metal Hybridized to 2D Metal-Organic Framework for Accelerated Water Electrocatalysis. <b>2019</b> , 5, 2429-2441	95
1412	Chemical Doped Ternary and Quaternary Transition-Metal-Based Electrocatalysts for Hydrogen Evolution Reaction. <b>2019</b> , 11, 4998-5012	4
1411	Cerium Phosphate as a Novel Cocatalyst Promoting NiCo <sub>2</sub> O <sub>4</sub> Nanowire Arrays for Efficient and Robust Electrocatalytic Oxygen Evolution. <b>2019</b> , 2, 5769-5776	17
1410	Towards dense single-atom catalysts for future automotive applications. <b>2019</b> , 2, 590-602	145
1409	Direct versus reverse vertical two-dimensional MoC/graphene heterostructures for enhanced hydrogen evolution reaction electrocatalysis. <b>2019</b> , 30, 415404	14
1408	Multifunctional High-Performance Electrocatalytic Properties of Nb <sub>2</sub> O <sub>5</sub> Incorporated Carbon Nanofibers as Pt Support Catalyst. <b>2019</b> , 6, 1900565	19
1407	A hierarchically-assembled Fe-MoS/NiS/nickel foam electrocatalyst for efficient water splitting. <b>2019</b> , 48, 12186-12192	20
1406	Insights into the Electrochemical Oxygen Evolution Reaction with ab Initio Calculations and Microkinetic Modeling: Beyond the Limiting Potential Volcano. <b>2019</b> , 123, 18960-18977	84
1405	Nitrogen-doped Graphene Chainmail Wrapped IrCo Alloy Particles on Nitrogen-doped Graphene Nanosheet for Highly Active and Stable Full Water Splitting. <b>2019</b> , 11, 5457-5465	12
1404	Defective layered double hydroxide formed by H <sub>2</sub> O <sub>2</sub> treatment act as highly efficient electrocatalytic for oxygen evolution reaction. <b>2019</b> , 44, 21858-21864	10
1403	Urchin-like Ni@N-doped carbon composites with Ni nanoparticles encapsulated in N-doped carbon nanotubes as high-efficient electrocatalyst for oxygen evolution reaction. <b>2019</b> , 278, 120843	12
1402	Cobalt-Coordinated Sulfur-Doped Graphitic Carbon Nitride on Reduced Graphene Oxide: An Efficient Metal(N,S)T-Class Bifunctional Electrocatalyst for Overall Water Splitting in Alkaline Media. <b>2019</b> , 7, 15373-15384	26
1401	P-Doped Iron-Nickel Sulfide Nanosheet Arrays for Highly Efficient Overall Water Splitting. <b>2019</b> , 11, 27667-27686	
1400	Evaluating the Catalytic Efficiency of Paired, Single-Atom Catalysts for the Oxygen Reduction Reaction. <b>2019</b> , 9, 7660-7667	74
1399	Toward a Design of Active Oxygen Evolution Catalysts: Insights from Automated Density Functional Theory Calculations and Machine Learning. <b>2019</b> , 9, 7651-7659	68
1398	Atomically dispersed metal catalysts for the oxygen reduction reaction: synthesis, characterization, reaction mechanisms and electrochemical energy applications. <b>2019</b> , 12, 2890-2923	208

1397	Fluorographdiyne: A Metal-Free Catalyst for Applications in Water Reduction and Oxidation. <b>2019</b> , 58, 13897-13903	72
1396	Preferential Microstructure Design of Two-Dimensional Electrocatalysts for Boosted Oxygen Evolution Reaction. <b>2019</b> , 11, 4662-4670	16
1395	Precious Metal-Free Nickel Nitride Catalyst for the Oxygen Reduction Reaction. <b>2019</b> , 11, 26863-26871	47
1394	Bipyridine-Assisted Assembly of Au Nanoparticles on Cu Nanowires To Enhance the Electrochemical Reduction of CO. <b>2019</b> , 58, 14100-14103	52
1393	Redox-Inert Fe Ions in Octahedral Sites of Co-Fe Spinel Oxides with Enhanced Oxygen Catalytic Activity for Rechargeable Zinc-Air Batteries. <b>2019</b> , 58, 13291-13296	223
1392	Synthesis and mechanism investigation of three-dimensional porous CoP <sub>3</sub> nanoplate arrays as efficient hydrogen evolution reaction electrocatalyst. <b>2019</b> , 494, 179-186	10
1391	Nanoarchitectonics to prepare practically useful artificial enzymes. <b>2019</b> , 475, 110492	29
1390	In Situ Catalytic Etching Strategy Promoted Synthesis of Carbon Nanotube Inlaid with Ultrasmall FeP Nanoparticles as Efficient Electrocatalyst for Hydrogen Evolution. <b>2019</b> , 7, 12741-12749	20
1389	Electrochemical Surface Science: Basics and Applications. <b>2019</b> , 2, 455-457	1
1388	Carbon dots-Pt modified polyaniline nanosheet grown on carbon cloth as stable and high-efficient electrocatalyst for hydrogen evolution in pH-universal electrolyte. <b>2019</b> , 257, 117905	37
1387	Effect of the Solvent on the Oxygen Evolution Reaction at the TiO <sub>2</sub> /Water Interface. <b>2019</b> , 123, 18467-18474	17
1386	Importance of Entropic Contribution to Electrochemical Water Oxidation Catalysis. <b>2019</b> , 4, 1918-1929	17
1385	Facilitating the C-C bond cleavage on sub-10 nm concavity-tunable Rh@Pt core-shell nanocubes for efficient ethanol electrooxidation. <b>2019</b> , 7, 17987-17994	19
1384	Nanocrystal/Metal-Organic Framework Hybrids as Electrocatalytic Platforms for CO Conversion. <b>2019</b> , 58, 12632-12639	71
1383	Bimetal/Organic Framework Derived High-Valence-State Cu-Doped Co <sub>3</sub> O <sub>4</sub> Porous Nanosheet Arrays for Efficient Oxygen Evolution and Water Splitting. <b>2019</b> , 11, 4420-4426	17
1382	Preparation of hierarchical trimetallic coordination polymer film as efficient electrocatalyst for oxygen evolution reaction. <b>2019</b> , 55, 9343-9346	12
1381	Microstructural Engineering of Heterogeneous Pt/Co Interface for Oxygen and Hydrogen Evolution. <b>2019</b> , 6, 3708-3713	5
1380	Nanostructured Co-based bifunctional electrocatalysts for energy conversion and storage: current status and perspectives. <b>2019</b> , 7, 18674-18707	152



1379	Nanocrystal/Metal-Organic Framework Hybrids as Electrocatalytic Platforms for CO <sub>2</sub> Conversion. <b>2019</b> , 131, 12762-12769	14
1378	Engineering atomically dispersed metal sites for electrocatalytic energy conversion. <b>2019</b> , 64, 103917	41
1377	Theoretical and Experimental Reactivity Predictors for the Electrocatalytic Activity of Copper Phenanthroline Derivatives for the Reduction of Dioxygen. <b>2019</b> , 123, 19468-19478	8
1376	Current progress of metallic and carbon-based nanostructure catalysts towards the electrochemical reduction of CO <sub>2</sub> . <b>2019</b> , 6, 3363-3380	22
1375	Composition- and size-engineering of porous PdAg alloy for high-performance ethanol electrooxidation. <b>2019</b> , 806, 239-245	10
1374	Hydrothermal synthesis of spherical Ru with high efficiency hydrogen evolution activity. <b>2019</b> , 848, 113320	2
1373	Self-gating in semiconductor electrocatalysis. <b>2019</b> , 18, 1098-1104	84
1372	A three-dimensional porous Co-P alloy supported on a copper foam as a new catalyst for sodium borohydride electrooxidation. <b>2019</b> , 48, 13248-13259	5
1371	Structure-Tunable Copper-Indium Catalysts for Highly Selective CO Electroreduction to CO or HCOOH. <b>2019</b> , 12, 3955-3959	31
1370	Coupling interface constructions of NiO/TiO <sub>2</sub> heterostructures for efficient electrocatalytic oxygen evolution. <b>2019</b> , 320, 134577	17
1369	Three-dimensional Ni foam supported pristine graphene as a superior oxygen evolution electrode. <b>2019</b> , 44, 22947-22954	4
1368	Special atmosphere annealed Co <sub>3</sub> O <sub>4</sub> porous nanoclusters with oxygen defects and high proportion of Co <sup>2+</sup> for oxygen evolution reaction. <b>2019</b> , 806, 163-169	14
1367	Nanowire Photoelectrochemistry. <b>2019</b> , 119, 9221-9259	92
1366	Pt/C Cathode Catalyst Degradation in a Polymer Electrolyte Fuel Cell Investigated by an Infographic Approach Combining Three-Dimensional Spectroimaging and Unsupervised Learning. <b>2019</b> , 123, 18844-18853	17
1365	Hollow Bi <sub>2</sub> MoO <sub>6</sub> Sphere Effectively Catalyzes the Ambient Electroreduction of N <sub>2</sub> to NH <sub>3</sub> . <b>2019</b> , 7, 12692-12696	36
1364	Shaping well-defined noble-metal-based nanostructures for fabricating high-performance electrocatalysts: advances and perspectives. <b>2019</b> , 6, 2582-2618	36
1363	Revealing the nature of active sites in electrocatalysis. <b>2019</b> , 10, 8060-8075	58
1362	An MnO <sub>2</sub> /Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> MXene nanohybrid: an efficient and durable electrocatalyst toward artificial N <sub>2</sub> fixation to NH <sub>3</sub> under ambient conditions. <b>2019</b> , 7, 18823-18827	73

1361	Channel-Rich RuCu Nanosheets for pH-Universal Overall Water Splitting Electrocatalysis. <b>2019</b> , 58, 13983-13988	862
1360	Double-catalytic-site engineering of nickel-based electrocatalysts by group VB metals doping coupling with in-situ cathodic activation for hydrogen evolution. <b>2019</b> , 258, 117984	24
1359	Hollow bimetallic M-Fe-P (M=Mn, Co, Cu) nanoparticles as efficient electrocatalysts for hydrogen evolution reaction. <b>2019</b> , 44, 22806-22815	10
1358	MOF-derived cobalt oxides nanoparticles anchored on CoMoO <sub>4</sub> as a highly active electrocatalyst for oxygen evolution reaction. <b>2019</b> , 806, 1097-1104	22
1357	Facile Synthesis and Characterization of [email protected]nL (n = 1-4) Core-Shell Nanocubes for Highly Efficient Oxygen Evolution in Acidic Media. <b>2019</b> , 31, 5867-5875	38
1356	Modeling with DFT and Chemical Descriptors Approach for the Development of Catalytic Alloys for PEMFCs. <b>2019</b> ,	2
1355	Dirac Nodal Arc Semimetal PtSn : An Ideal Platform for Understanding Surface Properties and Catalysis for Hydrogen Evolution. <b>2019</b> , 58, 13107-13112	27
1354	Dual Functionalized CuMOF-Based Composite for High-Performance Supercapacitors. <b>2019</b> , 58, 9844-9854	26
1353	A robust electrocatalytic activity toward the hydrogen evolution reaction from W/WC heterostructured nanoparticles coated with a N,P dual-doped carbon layer. <b>2019</b> , 55, 9665-9668	14
1352	Modified bluing treatment to produce nickel-cobalt-iron spinel oxide with promoted oxygen-evolving performance. <b>2019</b> , 55, 9841-9844	11
1351	Insight into the excellent catalytic activity of (CoMo) <sub>2</sub> /graphene for hydrogen evolution reaction. <b>2019</b> , 258, 118012	31
1350	Graphene edge-enhanced anchoring of the well-exposed cobalt clusters via strong chemical bonding for accelerating the oxygen reduction reaction. <b>2019</b> , 3, 2859-2866	5
1349	Dirac Nodal Arc Semimetal PtSn <sub>4</sub> : An Ideal Platform for Understanding Surface Properties and Catalysis for Hydrogen Evolution. <b>2019</b> , 131, 13241-13246	7
1348	Carbon impurity-free, novel Mn,N co-doped porous Mo <sub>2</sub> C nanorods for an efficient and stable hydrogen evolution reaction. <b>2019</b> , 6, 2464-2471	8
1347	Electrochemical Cycling-Induced Amorphization of Cobalt(II,III) Oxide for Stable High Surface Area Oxygen Evolution Electrocatalysts. <b>2019</b> , 6, 4031-4039	17
1346	Inner space- and architecture-controlled nanoframes for efficient electro-oxidation of liquid fuels. <b>2019</b> , 7, 19280-19289	6
1345	Ultrafast, Controllable Synthesis of Sub-Nano Metallic Clusters through Defect Engineering. <b>2019</b> , 11, 29773-29779	14
1344	Strategies toward Selective Electrochemical Ammonia Synthesis. <b>2019</b> , 9, 8316-8324	88

1343	Channel-Rich RuCu Nanosheets for pH-Universal Overall Water Splitting Electrocatalysis. <b>2019</b> , 131, 14121-14126	
1342	NiCoFe oxide amorphous nanohetrostructures for oxygen evolution reaction. <b>2019</b> , 44, 22991-23001	26
1341	Electrochemical Tip-Enhanced Raman Spectroscopy with Improved Sensitivity Enabled by a Water Immersion Objective. <b>2019</b> , 91, 11092-11097	17
1340	Electrochemical CO <sub>2</sub> Reduction: Classifying Cu Facets. <b>2019</b> , 9, 7894-7899	89
1339	Nitrogen-doped metal-free carbon catalysts for (electro)chemical CO conversion and valorisation. <b>2019</b> , 48, 13508-13528	47
1338	Mechanochemical synthesis of multi-site electrocatalysts as bifunctional zinc-air battery electrodes. <b>2019</b> , 7, 19355-19363	32
1337	Ultra-thin Co-Fe Layered Double Hydroxide Hollow Nanocubes for Efficient Electrocatalytic Water Oxidation. <b>2019</b> , 20, 2964-2967	13
1336	Metal-organic framework-derived materials for electrochemical energy applications. <b>2019</b> , 1, 100001	333
1335	Molecular-Scale Mechanistic Investigation of Oxygen Dissociation and Adsorption on Metal Surface-Supported Cobalt Phthalocyanine. <b>2019</b> , 10, 3966-3971	5
1334	Single molybdenum center supported on N-doped black phosphorus as an efficient electrocatalyst for nitrogen fixation. <b>2019</b> , 11, 13600-13611	63
1333	Design and optimization of cobalt-encapsulating vertical graphene nano-hills for hydrogen evolution reaction. <b>2019</b> , 7, 17046-17052	7
1332	Enhanced Photo-Electrocatalytic Hydrogen Generation in Graphene/hBN van der Waals Structures. <b>2019</b> , 123, 17249-17254	5
1331	Self-Supported Hierarchical IrO@NiO Nanoflake Arrays as an Efficient and Durable Catalyst for Electrochemical Oxygen Evolution. <b>2019</b> , 11, 25854-25862	40
1330	Amorphous Cobalt Boride Nanosheets Directly Grown on Nickel Foam: Controllable Alternately Dipping Deposition for Efficient Oxygen Evolution. <b>2019</b> , 6, 3684-3689	36
1329	Heterostructural Three-Dimensional Reduced Graphene Oxide/CoMn <sub>2</sub> O <sub>4</sub> Nanosheets toward a Wide-Potential Window for High-Performance Supercapacitors. <b>2019</b> , 2, 5219-5230	23
1328	Bipolar Electrochemistry as a Simple Synthetic Route toward Nanoscale Transition of Mo <sub>2</sub> B <sub>5</sub> and W <sub>2</sub> B <sub>5</sub> for Enhanced Hydrogen Evolution Reaction. <b>2019</b> ,	3
1327	Regulating the electron density of dual transition metal sulfide heterostructures for highly efficient hydrogen evolution in alkaline electrolytes. <b>2019</b> , 11, 14016-14023	18
1326	A Trimodal Porous Cobalt-Based Electrocatalyst for Enhanced Oxygen Evolution. <b>2019</b> , 6, 1900381	5

1325	2D Metal-Organic Framework Derived CuCo Alloy Nanoparticles Encapsulated by Nitrogen-Doped Carbonaceous Nanoleaves for Efficient Bifunctional Oxygen Electrocatalyst and Zinc-Air Batteries. <b>2019</b> , 25, 12780-12788	27
1324	Recent Progress on Surface Reconstruction of Earth-Abundant Electrocatalysts for Water Oxidation. <b>2019</b> , 15, e1901980	99
1323	Identification of FeN <sub>4</sub> as an Efficient Active Site for Electrochemical N <sub>2</sub> Reduction. <b>2019</b> , 9, 7311-7317	134
1322	Ir <sup>IV</sup> Catalytic Group in Ir-Doped NiV(OH) <sub>2</sub> for Overall Water Splitting. <b>2019</b> , 4, 1823-1829	83
1321	In Situ Coupling of Single Molecules Driven by Gold-Catalyzed Electrooxidation. <b>2019</b> , 131, 16154-16158	0
1320	Design of Multi-Metallic-Based Electrocatalysts for Enhanced Water Oxidation. <b>2019</b> , 20, 2936-2945	31
1319	Self-supported cobalt-molybdenum oxide nanosheet clusters as efficient electrocatalysts for hydrogen evolution reaction. <b>2019</b> , 44, 21220-21228	9
1318	In Situ Formed PtTi Nanoparticles on a Two-Dimensional Transition Metal Carbide (MXene) Used as Efficient Catalysts for Hydrogen Evolution Reactions. <b>2019</b> , 19, 5102-5108	69
1317	Designing materials for electrochemical carbon dioxide recycling. <b>2019</b> , 2, 648-658	442
1316	Self-supported ternary (Ni <sub>x</sub> Fe <sub>y</sub> ) <sub>2</sub> P nanoplates arrays as an efficient bifunctional electrocatalyst for overall water splitting. <b>2019</b> , 319, 561-568	13
1315	Enhanced Hydrogen Evolution Reaction Performance of NiCoP by Filling Oxygen Vacancies by Phosphorus in Thin-Coating CeO. <b>2019</b> , 11, 32460-32468	26
1314	Enhanced electrocatalytic performance triggered by atomically bridged boron nitride between palladium nanoparticles and carbon fibers in gas-diffusion electrodes. <b>2019</b> , 257, 117917	33
1313	Confined growth of MoSe <sub>2</sub> nanosheets in N-doped carbon shell with hierarchical porous structure for efficient hydrogen evolution. <b>2019</b> , 3, 2409-2416	13
1312	Co <sub>3</sub> O <sub>4</sub> Nanoparticles with Ultrasmall Size and Abundant Oxygen Vacancies for Boosting Oxygen Involved Reactions. <b>2019</b> , 29, 1903444	59
1311	Supported Noble-Metal Single Atoms for Heterogeneous Catalysis. <b>2019</b> , 31, e1902031	115
1310	NiBe Phosphate/Ni Foam Electrode: Facile Hydrothermal Synthesis and Ultralong Oxygen Evolution Reaction Durability. <b>2019</b> , 7, 18332-18340	21
1309	Molybdenum, Cobalt Sulfide-Modified N-, S-Doped Graphene from Low-Temperature Molecular Pyrolysis: Mutual Activation Effect for Hydrogen Evolution. <b>2019</b> , 7, 19442-19452	7
1308	2D Cocrystallized Metal-Organic Nanosheet Array as an Efficient and Stable Bifunctional Electrocatalyst for Overall Water Splitting. <b>2019</b> , 7, 18085-18092	86

1307	Three-dimensional open nano-netcage electrocatalysts for efficient pH-universal overall water splitting. <b>2019</b> , 10, 4875	119
1306	Dynamic oxygen adsorption on single-atomic Ruthenium catalyst with high performance for acidic oxygen evolution reaction. <b>2019</b> , 10, 4849	194
1305	Single-Atomic-Co Electrocatalysts with Self-Supported Architecture toward Oxygen-Involved Reaction. <b>2019</b> , 29, 1906477	53
1304	Electrode Materials Engineering in Electrocatalytic CO Reduction: Energy Input and Conversion Efficiency. <b>2020</b> , 32, e1903796	40
1303	Atomically Dispersed Binary Co-Ni Sites in Nitrogen-Doped Hollow Carbon Nanocubes for Reversible Oxygen Reduction and Evolution. <b>2019</b> , 31, e1905622	340
1302	Surface Engineering of 3D Gas Diffusion Electrodes for High-Performance H <sub>2</sub> Production with Nonprecious Metal Catalysts. <b>2019</b> , 9, 1901824	7
1301	In situ Spectroscopic Insight into the Origin of the Enhanced Performance of Bimetallic Nanocatalysts towards the Oxygen Reduction Reaction (ORR). <b>2019</b> , 131, 16208-16212	16
1300	High Efficiency Electrochemical Nitrogen Fixation Achieved with a Lower Pressure Reaction System by Changing the Chemical Equilibrium. <b>2019</b> , 58, 15541-15547	112
1299	Phosphorus Incorporation into Co S Nanocages for Highly Efficient Oxygen Evolution Catalysis. <b>2019</b> , 15, e1904507	51
1298	In situ Spectroscopic Insight into the Origin of the Enhanced Performance of Bimetallic Nanocatalysts towards the Oxygen Reduction Reaction (ORR). <b>2019</b> , 58, 16062-16066	77
1297	Identification of Key Reversible Intermediates in Self-Reconstructed Nickel-Based Hybrid Electrocatalysts for Oxygen Evolution. <b>2019</b> , 58, 17458-17464	120
1296	Optimizing interfacial electronic coupling with metal oxide to activate inert polyaniline for superior electrocatalytic hydrogen generation. <b>2019</b> , 1, 77-84	34
1295	Exploring the Influence of Halogen Coordination Effect of Stable Bimetallic MOFs on Oxygen Evolution Reaction. <b>2019</b> , 25, 15830-15836	19
1294	Adjustable Ternary FeCoNi Nanohybrids for Enhanced Oxygen Evolution Reaction. <b>2019</b> , 25, 15361-15366	5
1293	Doping single transition metal atom into PtTe sheet for catalyzing nitrogen reduction and hydrogen evolution reactions. <b>2019</b> , 151, 144710	7
1292	Hydrogen from photo-electrocatalytic water splitting. <b>2019</b> , 419-486	4
1291	Two-dimensional transition-metal dichalcogenides for electrochemical hydrogen evolution reaction. <b>2019</b> , 18, 100140	16
1290	Regulating Electrocatalysts via Surface and Interface Engineering for Acidic Water Electrooxidation. <b>2019</b> , 4, 2719-2730	124

1289	Nanoporous Iridium-Based Alloy Nanowires as Highly Efficient Electrocatalysts Toward Acidic Oxygen Evolution Reaction. <b>2019</b> , 11, 39728-39736	34
1288	Factors and Dynamics of Cu Nanocrystal Reconstruction under CO <sub>2</sub> Reduction. <b>2019</b> , 2, 7744-7749	35
1287	Statistical learning goes beyond the d-band model providing the thermochemistry of adsorbates on transition metals. <b>2019</b> , 10, 4687	42
1286	Heptanuclear brucite disk with cyanide bridges in a cocrystal and tracking its pyrolysis to an efficient oxygen evolution electrode. <b>2019</b> , 64, 1667-1674	10
1285	Electrochemical Behavior of Carbon Electrodes for Redox Studies in a Transmission Electron Microscope. <b>2019</b> , 25, 1304-1310	7
1284	Cuprous Oxide Electrodeposited with Nickel for the Oxygen Evolution Reaction in 1 M NaOH. <b>2019</b> , 123, 1287-1292	8
1283	Creating Directionality in Nanoporous Carbon Materials: Adjustable Combinations of Structural and Chemical Gradients. <b>2019</b> , 29, 1904058	7
1282	Atomic Nb Anchoring on Graphdiyne as a New Potential Electrocatalyst for Nitrogen Fixation: A Computational View. <b>2019</b> , 2, 1900132	22
1281	High Efficiency Electrochemical Nitrogen Fixation Achieved with a Lower Pressure Reaction System by Changing the Chemical Equilibrium. <b>2019</b> , 131, 15687-15693	19
1280	On the Possibilities and Considerations of Interfacing Ultra-High Vacuum Equipment with an Electrochemical Setup. <b>2019</b> , 20, 3024-3029	5
1279	Ultrasml Co@Co(OH) Nanoclusters Embedded in N-Enriched Mesoporous Carbon Networks as Efficient Electrocatalysts for Water Oxidation. <b>2019</b> , 12, 5117-5125	18
1278	Metal-organic frameworks: a promising platform for constructing non-noble electrocatalysts for the oxygen-reduction reaction. <b>2019</b> , 7, 1964-1988	118
1277	Electrochemically accessing ultrathin Co (oxy)-hydroxide nanosheets and operando identifying their active phase for the oxygen evolution reaction. <b>2019</b> , 12, 739-746	98
1276	Ultrathin nickel boride nanosheets anchored on functionalized carbon nanotubes as bifunctional electrocatalysts for overall water splitting. <b>2019</b> , 7, 764-774	75
1275	Crystalline Ni(OH) <sub>2</sub> /Amorphous NiMoO <sub>x</sub> Mixed-Catalyst with Pt-Like Performance for Hydrogen Production. <b>2019</b> , 9, 1902703	66
1274	Fe-, N-Embedded Hierarchically Porous Carbon Architectures Derived from FeTe-Trapped Zeolitic Imidazolate Frameworks as Efficient Oxygen Reduction Electrocatalysts. <b>2019</b> , 7, 19268-19276	15
1273	Selective CO <sub>2</sub> Electroreduction to Ethylene and Multicarbon Alcohols via Electrolyte-Driven Nanostructuring. <b>2019</b> , 131, 17203-17209	23
1272	Electrochemical Reduction of N <sub>2</sub> to NH <sub>3</sub> Using a Co-Atom Stabilized on Defective N-Doped Graphene: A Computational Study. <b>2019</b> , 4, 12216-12226	8

1271	Mechanistic Understanding of Plasmon-Enhanced Electrochemistry. <b>2019</b> , 123, 29360-29369	32
1270	Universal scaling relations for the rational design of molecular water oxidation catalysts with near-zero overpotential. <b>2019</b> , 10, 4993	85
1269	Interfacial aspect of ZnTe/In <sub>2</sub> Te <sub>3</sub> heterostructures as an efficient catalyst for the hydrogen evolution reaction. <b>2019</b> , 7, 27441-27449	27
1268	Laser-Induced Pyridinic-Nitrogen-Rich Defective Carbon Nanotubes for Efficient Oxygen Electrocatalysis. <b>2019</b> , 11, 6131-6138	5
1267	Missing-linker metal-organic frameworks for oxygen evolution reaction. <b>2019</b> , 10, 5048	220
1266	Non-noble metal-nitride based electrocatalysts for high-performance alkaline seawater electrolysis. <b>2019</b> , 10, 5106	318
1265	Solid-State Conversion Synthesis of Advanced Electrocatalysts for Water Splitting. <b>2019</b> , 26, 3961	3
1264	Breaking the Local Symmetry of LiCoO via Atomic Doping for Efficient Oxygen Evolution. <b>2019</b> , 19, 8774-8779	20
1263	Rational Design of Rhodium-Iridium Alloy Nanoparticles as Highly Active Catalysts for Acidic Oxygen Evolution. <b>2019</b> , 13, 13225-13234	74
1262	Photon-Induced, Timescale, and Electrode Effects Critical for the in Situ X-ray Spectroscopic Analysis of Electrocatalysts: The Water Oxidation Case. <b>2019</b> , 123, 28533-28549	13
1261	Highly Efficient and Stable Photoelectrochemical Hydrogen Evolution with 2D-NbS/Si Nanowire Heterojunction. <b>2019</b> , 11, 44179-44185	23
1260	Adhesion Energies of Solvent Films to Pt(111) and Ni(111) Surfaces by Adsorption Calorimetry. <b>2019</b> , 9, 11819-11825	10
1259	Unassisted solar lignin valorisation using a compartmented photo-electro-biochemical cell. <b>2019</b> , 10, 5123	25
1258	Boosting HER Performance of Pt-Based Catalysts Immobilized on Functionalized Vulcan Carbon by Atomic Layer Deposition. <b>2019</b> , 6,	27
1257	Engineering bunched Pt-Ni alloy nanocages for efficient oxygen reduction in practical fuel cells. <i>Science</i> , <b>2019</b> , 366, 850-856	333 545
1256	Solar Water Splitting with Perovskite/Silicon Tandem Cell and TiC-Supported Pt Nanocluster Electrocatalyst. <b>2019</b> , 3, 2930-2941	49
1255	Reductive and Coordinative Effects of Hydrazine in Structural Transformations of Copper Hydroxide Nanoparticles. <b>2019</b> , 9,	7
1254	Heterolayered Ni-Fe Hydroxide/Oxide Nanostructures Generated on a Stainless-Steel Substrate for Efficient Alkaline Water Splitting. <b>2019</b> , 11, 44161-44169	23

1253	Structural and Electronic Optimization of MoS Edges for Hydrogen Evolution. <b>2019</b> , 141, 18578-18584	150
1252	A Review on the Promising Plasma-Assisted Preparation of Electrocatalysts. <b>2019</b> , 9,	15
1251	Synergy of a Metallic NiCo Dimer Anchored on a C <sub>2</sub> N Graphene Matrix Promotes the Electrochemical CO <sub>2</sub> Reduction Reaction. <b>2019</b> , 7, 19113-19121	50
1250	Amorphous MoS <sub>2</sub> confined in nitrogen-doped porous carbon for improved electrocatalytic stability toward hydrogen evolution reaction. <b>2019</b> , 12, 3116-3122	16
1249	Superb water splitting activity of the electrocatalyst FeCo(PO) designed with computation aid. <b>2019</b> , 10, 5195	65
1248	A Simple Mechanical Method to Modulate the Electrochemical Electrosorption Processes at Metal Surfaces. <b>2019</b> , 24,	1
1247	Identification of Key Reversible Intermediates in Self-Reconstructed Nickel-Based Hybrid Electrocatalysts for Oxygen Evolution. <b>2019</b> , 131, 17619-17625	20
1246	Selective CO Electroreduction to Ethylene and Multicarbon Alcohols via Electrolyte-Driven Nanostructuring. <b>2019</b> , 58, 17047-17053	93
1245	Atomic Insights of Iron Doping in Nickel Hydroxide Nanosheets for Enhanced Oxygen Catalysis to Boost Broad Temperature Workable Zinc-Air Batteries. <b>2019</b> , 11, 6002-6007	8
1244	Devisable POM/Ni Foam Composite: Precisely Control Synthesis toward Enhanced Hydrogen Evolution Reaction at High pH. <b>2019</b> , 25, 15548-15554	8
1243	Smart Control of Composition for Double Perovskite Electrocatalysts toward Enhanced Oxygen Evolution Reaction. <b>2019</b> , 12, 5111-5116	20
1242	Cu,N-Codoped Carbon Nanodisks with Biomimic Stomata-Like Interconnected Hierarchical Porous Topology as Efficient Electrocatalyst for Oxygen Reduction Reaction. <b>2019</b> , 15, e1902410	43
1241	Quantitative evaluation of synergistic effects for Pt nanoparticles embedded in N-enriched carbon matrix as an efficient and durable catalyst for the hydrogen evolution reaction and their PEMWE performance. <b>2019</b> , 44, 31121-31128	8
1240	Highly dispersed Ni <sub>2</sub> -MoxP nanoparticles on oxygen-defect-rich NiMoO <sub>4</sub> nanosheets as an active electrocatalyst for alkaline hydrogen evolution reaction. <b>2019</b> , 444, 227311	18
1239	Effect of Zn on Size Control and Oxygen Reduction Reaction Activity of Co Nanoparticles Supported on N-Doped Carbon Nanotubes. <b>2019</b> , 31, 8864-8874	21
1238	Activity Origin and Multifunctionality of Pt-Based Intermetallic Nanostructures for Efficient Electrocatalysis. <b>2019</b> , 9, 11242-11254	56
1237	New Mechanism for N Reduction: The Essential Role of Surface Hydrogenation. <b>2019</b> , 141, 18264-18270	94
1236	Transforming Energy with Single-Atom Catalysts. <b>2019</b> , 3, 2897-2929	115



1235	Subnano Amorphous Fe-Based Clusters with High Mass Activity for Efficient Electrocatalytic Oxygen Reduction Reaction. <b>2019</b> , 11, 41432-41439	11
1234	Pitaya-like cobalt/molybdenum carbide encapsulated in N-doped carbon nanospheres toward efficient hydrogen evolution. <b>2019</b> ,	
1233	Facile Synthesis of N-Doped Hollow Carbon Spheres @MoS <sub>2</sub> via Polymer Microspheres Template Method and One-Step Calcination for Enhanced Hydrogen Evolution Reaction. <b>2019</b> , 6, 1101-1106	13
1232	Tuning the hydrogen activation reactivity on topological insulator heterostructures. <b>2019</b> , 58, 40-46	27
1231	Unusual synergistic effect in layered Ruddlesden-Popper oxide enables ultrafast hydrogen evolution. <b>2019</b> , 10, 149	116
1230	Chromium-ruthenium oxide solid solution electrocatalyst for highly efficient oxygen evolution reaction in acidic media. <b>2019</b> , 10, 162	201
1229	Toward Predicting Intermetallics Surface Properties with High-Throughput DFT and Convolutional Neural Networks. <b>2019</b> , 59, 4742-4749	18
1228	Theoretical Understanding of Electrocatalytic Hydrogen Production Performance by Low-Dimensional Metal-Organic Frameworks on the Basis of Resonant Charge-Transfer Mechanisms. <b>2019</b> , 10, 6955-6961	4
1227	Design Criteria for Oxygen Evolution Electrocatalysts from First Principles: Introduction of a Unifying Material-Screening Approach. <b>2019</b> , 2, 7991-8001	43
1226	Interface Properties of the Partially Oxidized Pt(111) Surface Using Hybrid DFT-Solvation Models. <b>2019</b> , 11, 43774-43780	8
1225	Single-Crystal Cobalt Phosphate Nanosheets for Biomimetic Oxygen Evolution in Neutral Electrolytes. <b>2019</b> , 131, 14741-14746	34
1224	Intercalated Iridium Diselenide Electrocatalysts for Efficient pH-Universal Water Splitting. <b>2019</b> , 58, 14764-14769	
1223	Theory-Driven Design and Targeting Synthesis of a Highly-Conjugated Basal-Plane 2D Covalent Organic Framework for Metal-Free Electrocatalytic OER. <b>2019</b> , 4, 2251-2258	48
1222	Molecular cobalt corrole complex for the heterogeneous electrocatalytic reduction of carbon dioxide. <b>2019</b> , 10, 3864	52
1221	Intercalated Iridium Diselenide Electrocatalysts for Efficient pH-Universal Water Splitting. <b>2019</b> , 131, 14906-14911	18
1220	Single-Crystal Cobalt Phosphate Nanosheets for Biomimetic Oxygen Evolution in Neutral Electrolytes. <b>2019</b> , 58, 14599-14604	66
1219	MoP/Co <sub>2</sub> P Hybrid Nanostructure Anchored on Carbon Fiber Paper as an Effective Electrocatalyst for Hydrogen Evolution. <b>2019</b> , 11, 6086-6091	18
1218	Efficient Liberation of Ammonia from Thermal Reaction of ScNH Cations and Water. <b>2019</b> , 123, 7576-7581	1

1217	Insights into Compositional and Structural Effects of Bimetallic Hollow Mesoporous Nanospheres toward Ethanol Oxidation Electrocatalysis. <b>2019</b> , 10, 5490-5498	23
1216	Atomic and electronic modulation of self-supported nickel-vanadium layered double hydroxide to accelerate water splitting kinetics. <b>2019</b> , 10, 3899	194
1215	Hierarchical MoP Hollow Nanospheres Anchored on a N,P,S-Doped Porous Carbon Matrix as Efficient Electrocatalysts for the Hydrogen Evolution Reaction. <b>2019</b> , 12, 4662-4670	24
1214	Coupling NiSe <sub>2</sub> -Ni <sub>2</sub> P heterostructure nanowrinkles for highly efficient overall water splitting. <b>2019</b> , 377, 600-608	123
1213	In situ coupled amorphous cobalt nitride with nitrogen-doped graphene aerogel as a trifunctional electrocatalyst towards Zn-air battery driven full water splitting. <b>2019</b> , 259, 118100	76
1212	DFT calculations: A powerful tool for better understanding of electrocatalytic oxygen reduction reactions on Pt-based metallic catalysts. <b>2019</b> , 170, 109202	29
1211	Inception of molybdate as a "pore forming additive" to enhance the bifunctional electrocatalytic activity of nickel and cobalt based mixed hydroxides for overall water splitting. <b>2019</b> , 11, 16896-16906	14
1210	Strongly coupled hollow-oxide/phosphide hybrid coated with nitrogen-doped carbon as highly efficient electrocatalysts in alkaline for hydrogen evolution reaction. <b>2019</b> , 377, 582-588	25
1209	Selecting between two transition states by which water oxidation intermediates decay on an oxide surface. <b>2019</b> , 2, 820-827	27
1208	One minute from pristine carbon to an electrocatalyst for hydrogen peroxide production. <b>2019</b> , 7, 21329-21337	22
1207	Tailoring the electron density of Pd nanoparticles through electronic metal-support interaction for accelerating electrocatalysis of formic acid. <b>2019</b> , 107, 106540	8
1206	Raney Nickel 2.0: Development of a high-performance bifunctional electrocatalyst. <b>2019</b> , 322, 134687	10
1205	Molecular Modulation of a Molybdenum-Selenium Cluster by Sulfur Substitution To Enhance the Hydrogen Evolution Reaction. <b>2019</b> , 58, 12415-12421	7
1204	An MOF-derived copper@nitrogen-doped carbon composite: the synergistic effects of N-types and copper on selective CO <sub>2</sub> electroreduction. <b>2019</b> , 9, 5668-5675	26
1203	Screening alloy electrocatalysts by combining magnetron sputtering and scanning electrochemical microscopy. <b>2019</b> , 99, 185-191	1
1202	Trinuclear Ni(II) oriented highly dense packing and conjugation degree of metal-organic frameworks for efficient water oxidation. <b>2019</b> , 21, 5862-5866	19
1201	3D carbon coated NiCoS nanowires doped with nitrogen for electrochemical energy storage and conversion. <b>2019</b> , 556, 449-457	15
1200	Nanoscale Active Sites for the Hydrogen Evolution Reaction on Low Carbon Steel. <b>2019</b> , 123, 24146-24155	28

1199	A Two-Dimensional MoS Catalysis Transistor by Solid-State Ion Gating Manipulation and Adjustment (SIGMA). <b>2019</b> , 19, 7293-7300	24
1198	Advances and challenges in understanding the electrocatalytic conversion of carbon dioxide to fuels. <b>2019</b> , 4, 732-745	677
1197	One-step synthesis of a hierarchical self-supported WS <sub>2</sub> film for efficient electrocatalytic hydrogen evolution. <b>2019</b> , 7, 22405-22411	25
1196	Single molybdenum atom anchored on 2D TiNO MXene as a promising electrocatalyst for N fixation. <b>2019</b> , 11, 18132-18141	36
1195	Electrospun Cobalt-Doped MoS <sub>2</sub> Nanofibers for Electrocatalytic Hydrogen Evolution. <b>2019</b> , 166, F996-F999	7
1194	Probing the Role of Internalized Geometric Strain on Heterogeneous Electrocatalysis. <b>2019</b> , 31, 7522-7530	9
1193	Precipitating Metal Nitrate Deposition of Amorphous Metal Oxyhydroxide Electrodes Containing Ni, Fe, and Co for Electrocatalytic Water Oxidation. <b>2019</b> , 9, 9650-9662	25
1192	Ternary Palladium-Boron-Phosphorus Alloy Mesoporous Nanospheres for Highly Efficient Electrocatalysis. <b>2019</b> , 13, 12052-12061	62
1191	Electrochemically Determined O-H Bond Dissociation Free Energies of NiO Electrodes Predict Proton-Coupled Electron Transfer Reactivity. <b>2019</b> , 141, 14971-14975	24
1190	Decoupled hydrogen and oxygen evolution by a two-step electrochemical-chemical cycle for efficient overall water splitting. <b>2019</b> , 4, 786-795	139
1189	Template-Directed Bifunctional Dodecahedral CoP/CN@MoS Electrode for High Efficient Water Splitting. <b>2019</b> , 11, 36649-36657	45
1188	Tuning the Hydrogen Evolution Performance of Metallic 2D Tantalum Disulfide by Interfacial Engineering. <b>2019</b> , 13, 11874-11881	45
1187	Crystalline/Amorphous Co <sub>2</sub> [email protected] Core/Shell Nanoheterostructures Supported on Porous Carbon Microspheres as Efficient Oxygen Reduction Electrocatalysts. <b>2019</b> , 31, 8026-8034	22
1186	Single Site Cobalt Substitution in 2D Molybdenum Carbide (MXene) Enhances Catalytic Activity in the Hydrogen Evolution Reaction. <b>2019</b> , 141, 17809-17816	144
1185	Catalytic Effect on CO Electroreduction by Hydroxyl-Terminated Two-Dimensional MXenes. <b>2019</b> , 11, 36571-36579	52
1184	Understanding the Role of Metal and Molecular Structure on the Electrocatalytic Hydrogenation of Oxygenated Organic Compounds. <b>2019</b> , 9, 9964-9972	45
1183	Soft Templating and Disorder in an Applied 1D Cobalt Coordination Polymer Electrocatalyst. <b>2019</b> , 1, 1354-1369	5
1182	Unfolding adsorption on metal nanoparticles: Connecting stability with catalysis. <b>2019</b> , 5, eaax5101	43

1181	Confined Co <sub>9</sub> S <sub>8</sub> into a defective carbon matrix as a bifunctional oxygen electrocatalyst for rechargeable zinc-air batteries. <b>2019</b> , 9, 5757-5762	5
1180	Effects of iron doping on the hydrogen evolution reaction performance of self-supported nickel selenides. <b>2019</b> , 14, 102522	5
1179	Synergistic bimetallic CoFeO clusters supported on graphene for ambient electrocatalytic reduction of nitrogen to ammonia. <b>2019</b> , 55, 12184-12187	27
1178	Selective high-temperature CO <sub>2</sub> electrolysis enabled by oxidized carbon intermediates. <b>2019</b> , 4, 846-855	31
1177	Highly stable one-dimensional Pt nanowires with modulated structural disorder towards the oxygen reduction reaction. <b>2019</b> , 7, 24830-24836	14
1176	Deep Reconstruction of Nickel-Based Precatalysts for Water Oxidation Catalysis. <b>2019</b> , 4, 2585-2592	69
1175	Interface Charge Engineering of Ultrafine Ru/Ni <sub>2</sub> P Nanoparticles Encapsulated in N,P-Codoped Hollow Carbon Nanospheres for Efficient Hydrogen Evolution. <b>2019</b> , 7, 17714-17722	15
1174	Nitrogen-doped hollow carbon spheres as highly effective multifunctional electrocatalysts for fuel cells, Zn-air batteries, and water-splitting electrolyzers. <b>2019</b> , 441, 227166	25
1173	Bifunctional Electrocatalytic Activity of Bis(iminothiolato)nickel Monolayer for Overall Water Splitting. <b>2019</b> , 123, 25651-25656	11
1172	Inverting X-ray Absorption Spectra of Catalysts by Machine Learning in Search for Activity Descriptors. <b>2019</b> , 9, 10192-10211	55
1171	Oxide Passivated [email protected] Ru(OH) <sub>x</sub> Cl <sub>y</sub> Cluster as Highly Efficient Catalysts for the Oxygen and Hydrogen Evolution. <b>2019</b> , 7, 17227-17236	12
1170	Two-Dimensional Cobalt Phosphate Hydroxide Nanosheets: A New Type of High-Performance Electrocatalysts with Intrinsic CoO Lattice Distortion for Water Oxidation. <b>2019</b> , 11, 38633-38640	21
1169	Recent Advances and Prospective in Ruthenium-Based Materials for Electrochemical Water Splitting. <b>2019</b> , 9, 9973-10011	269
1168	PdMo bimetallic for oxygen reduction catalysis. <b>2019</b> , 574, 81-85	456
1167	Reduced State of the Graphene Oxide@Polyoxometalate Nanocatalyst Achieving High-Efficiency Nitrogen Fixation under Light Driving Conditions. <b>2019</b> , 11, 37927-37938	30
1166	Recent Insights into the Oxygen-Reduction Electrocatalysis of Fe/N/C Materials. <b>2019</b> , 9, 10126-10141	171
1165	Transition Metal Arsenide Catalysts for the Hydrogen Evolution Reaction. <b>2019</b> , 123, 24007-24012	4
1164	Oxygen Defects and Surface Chemistry of Reducible Oxides. <b>2019</b> , 6,	27

1163	Quantitative evaluation of the surface stability and morphological changes of CuO particles. <b>2019</b> , 5, e02500	15
1162	Passivation effect for current collectors enables high-voltage aqueous sodium ion batteries. <b>2019</b> , 14, 100337	26
1161	Activating Inert ZnO by Surface Cobalt Doping for Efficient Water Oxidation in Neutral Media. <b>2019</b> , 7, 18055-18060	13
1160	Origin of high hydrogen evolution activity on InSe nanoribbons: A first-principles study. <b>2019</b> , 44, 24174-24183	5
1159	Recent Progresses in Oxygen Reduction Reaction Electrocatalysts for Electrochemical Energy Applications. <b>2019</b> , 2, 518-538	103
1158	A simple strategy to construct cobalt oxide-based high-efficiency electrocatalysts with oxygen vacancies and heterojunctions. <b>2019</b> , 326, 134979	20
1157	Noble metal-based 1D and 2D electrocatalytic nanomaterials: Recent progress, challenges and perspectives. <b>2019</b> , 28, 100774	47
1156	Laser Synthesis of Iridium Nanospheres for Overall Water Splitting. <b>2019</b> , 12,	12
1155	Simultaneously Achieving High Activity and Selectivity toward Two-Electron O <sub>2</sub> Electroreduction: The Power of Single-Atom Catalysts. <b>2019</b> , 9, 11042-11054	120
1154	Low Iridium Content Confined inside a Co <sub>3</sub> O <sub>4</sub> Hollow Sphere for Superior Acidic Water Oxidation. <b>2019</b> , 7, 16640-16650	9
1153	Enhancing the activity of oxygen-evolution and chlorine-evolution electrocatalysts by atomic layer deposition of TiO. <b>2019</b> , 12, 358-365	45
1152	Creating stable interfaces between reactive materials: titanium nitride protects photoabsorber/catalyst interface in water-splitting photocathodes. <b>2019</b> , 7, 2400-2411	20
1151	Highly Efficient Solar-Driven Carbon Dioxide Reduction on Molybdenum Disulfide Catalyst Using Choline Chloride-Based Electrolyte. <b>2019</b> , 9, 1803536	26
1150	Highly Active Cobalt-Based Electrocatalysts with Facile Incorporation of Dopants for the Oxygen Evolution Reaction. <b>2019</b> , 58, 3491-3495	45
1149	Electrochemical Carbon Dioxide Splitting. <b>2019</b> , 6, 1587-1604	13
1148	One-pot synthesis and shape control of metal selenides, sulfides and oxides with oxalic acid as the reducing reagent. <b>2019</b> , 9, 1333-1339	2
1147	Facile synthesis of hollow Co <sub>3</sub> O <sub>4</sub> -embedded carbon/reduced graphene oxides nanocomposites for use as efficient electrocatalysts in oxygen evolution reaction. <b>2019</b> , 300, 123-130	44
1146	Hydrogen adsorption trends on various metal-doped NiP surfaces for optimal catalyst design. <b>2018</b> , 21, 184-191	13

1145	Single tungsten atom supported on N-doped graphyne as a high-performance electrocatalyst for nitrogen fixation under ambient conditions. <b>2019</b> , 21, 1546-1551	94
1144	Enhanced synergistic catalysis by a novel triple-phase interface design of NiO/Ru@Ni for the hydrogen evolution reaction. <b>2019</b> , 7, 2344-2350	43
1143	In situ growth of metallic Ag intercalated CoAl layered double hydroxides as efficient electrocatalysts for the oxygen reduction reaction in alkaline solutions. <b>2019</b> , 48, 1084-1094	23
1142	Arising synergetic and antagonistic effects in the design of Ni- and Ru-based water splitting electrocatalysts. <b>2019</b> , 7, 639-646	20
1141	A computational study on Pt and Ru dimers supported on graphene for the hydrogen evolution reaction: new insight into the alkaline mechanism. <b>2019</b> , 7, 3648-3654	86
1140	Recent advances in layered double hydroxide electrocatalysts for the oxygen evolution reaction. <b>2019</b> , 7, 5069-5089	254
1139	Pack die Sonne in den Tank: Zur Weiterentwicklung nachhaltiger Energiesysteme. <b>2019</b> , 131, 349-354	4
1138	Covalently Grafting Cobalt Porphyrin onto Carbon Nanotubes for Efficient CO <sub>2</sub> Electroreduction. <b>2019</b> , 131, 6667-6671	15
1137	Covalently Grafting Cobalt Porphyrin onto Carbon Nanotubes for Efficient CO Electroreduction. <b>2019</b> , 58, 6595-6599	118
1136	CoNi/Ba <sub>0.5</sub> Sr <sub>0.5</sub> Co <sub>0.8</sub> Fe <sub>0.2</sub> O <sub>3</sub> /N-doped-carbon as a highly-active bifunctional electrocatalyst for water splitting. <b>2019</b> , 415, 91-98	8
1135	Crystalline Facet-Directed Generation Engineering of Ultrathin Platinum Nanodendrites. <b>2019</b> , 10, 663-671	31
1134	A 2D metal-organic framework/Ni(OH) <sub>2</sub> heterostructure for an enhanced oxygen evolution reaction. <b>2019</b> , 11, 3599-3605	86
1133	Iron incorporation affecting the structure and boosting catalytic activity of Cox-Fey-P for efficient hydrogen evolution. <b>2019</b> , 478, 103-109	2
1132	One-pot synthesis of IrNi@Ir core-shell nanoparticles as highly active hydrogen oxidation reaction electrocatalyst in alkaline electrolyte. <b>2019</b> , 59, 26-32	42
1131	Three-dimensionally patterned Ag-Pt alloy catalyst on planar Si photocathodes for photoelectrochemical H <sub>2</sub> evolution. <b>2019</b> , 21, 4184-4192	9
1130	Superhydrophilic Graphdiyne Accelerates Interfacial Mass/Electron Transportation to Boost Electrocatalytic and Photoelectrocatalytic Water Oxidation Activity. <b>2019</b> , 29, 1808079	68
1129	Kinetic Understanding of the Reduction of Oxygen to Hydrogen Peroxide over an N-Doped Carbon Electrocatalyst. <b>2019</b> , 123, 4590-4596	28
1128	Hybridizing NiCo <sub>2</sub> O <sub>4</sub> and Amorphous Ni <sub>x</sub> Co <sub>y</sub> Layered Double Hydroxides with Remarkably Improved Activity toward Efficient Overall Water Splitting. <b>2019</b> , 7, 4784-4791	49

1127	Nanoscale hetero-interfaces between metals and metal compounds for electrocatalytic applications. <b>2019</b> , 7, 5090-5110	82
1126	Activation of transition metal oxides by in-situ electro-regulated structure-reconstruction for ultra-efficient oxygen evolution. <b>2019</b> , 58, 778-785	57
1125	An essential descriptor for the oxygen evolution reaction on reducible metal oxide surfaces. <b>2019</b> , 10, 3340-3345	37
1124	Porous Mn-Doped FeP/Co (PO ) Nanosheets as Efficient Electrocatalysts for Overall Water Splitting in a Wide pH Range. <b>2019</b> , 12, 1334-1341	56
1123	Breaking Long-Range Order in Iridium Oxide by Alkali Ion for Efficient Water Oxidation. <b>2019</b> , 141, 3014-3023	172
1122	Ultrathin nanodendrite surrounded PtRuNi nanoframes as efficient catalysts for methanol electrooxidation. <b>2019</b> , 7, 2547-2552	25
1121	Structure Sensitivity in the Electrocatalytic Reduction of CO with Gold Catalysts. <b>2019</b> , 58, 3774-3778	62
1120	Bifunctional Oxygen Electrocatalysts for Lithium-Oxygen Batteries. <b>2019</b> , 2, 311-325	18
1119	Constructing Earth-abundant 3D Nanoarrays for Efficient Overall Water Splitting [A Review]. <b>2019</b> , 11, 1550-1575	76
1118	Sodium-ion electrochemical tuning of Prussian blue analog as an efficient oxygen evolution catalyst. <b>2019</b> , 12, 71-77	6
1117	Single-Metal Atom Anchored on Boron Monolayer ( $\sqrt{3}\times\sqrt{3}$ ) as an Electrocatalyst for Nitrogen Reduction into Ammonia at Ambient Conditions: A First-Principles Study. <b>2019</b> , 123, 4274-4281	61
1116	Engineering NiO/NiFe LDH Intersection to Bypass Scaling Relationship for Oxygen Evolution Reaction via Dynamic Tridimensional Adsorption of Intermediates. <b>2019</b> , 31, e1804769	176
1115	Rational Design of Graphene-Supported Single Atom Catalysts for Hydrogen Evolution Reaction. <b>2019</b> , 9, 1803689	147
1114	Structure Sensitivity in the Electrocatalytic Reduction of CO <sub>2</sub> with Gold Catalysts. <b>2019</b> , 131, 3814-3818	18
1113	Fabrication of NiC/MoC/NiMoO Heterostructured Nanorod Arrays as Stable Bifunctional Electrocatalysts for Efficient Overall Water Splitting. <b>2019</b> , 14, 1013-1020	11
1112	Triple hierarchy and double synergies of NiFe/CoS/carbon cloth: a new and efficient electrocatalyst for the oxygen evolution reaction. <b>2019</b> , 11, 3378-3385	32
1111	Highly Active Cobalt-Based Electrocatalysts with Facile Incorporation of Dopants for the Oxygen Evolution Reaction. <b>2019</b> , 131, 3529-3533	22
1110	Heterogeneous NiSe <sub>2</sub> /Ni Ultrafine Nanoparticles Embedded into an N,S-Codoped Carbon Framework for pH-Universal Hydrogen Evolution Reaction. <b>2019</b> , 7, 4119-4127	20

1109	Superior Performance of Ag over Pt for Hydrogen Evolution Reaction in Water Electrolysis under High Overpotentials. <b>2019</b> , 2, 1221-1228	16
1108	Promising evolution of biofuel generations. Subject review. <b>2019</b> , 28, 127-139	157
1107	Impact of Interfacial Electron Transfer on Electrochemical CO Reduction on Graphitic Carbon Nitride/Doped Graphene. <b>2019</b> , 15, e1804224	56
1106	Methylamine Treated Mn <sub>3</sub> O <sub>4</sub> Nanoparticles as a Highly Efficient Water Oxidation Catalyst under Neutral Condition. <b>2019</b> , 11, 1665-1672	11
1105	Porous Cobalt-Nickel Hydroxide Nanosheets with Active Cobalt Ions for Overall Water Splitting. <b>2019</b> , 15, e1804832	36
1104	Plasma-etching enhanced titanium oxynitride active phase with high oxygen content for ambient electrosynthesis of ammonia. <b>2019</b> , 100, 90-95	26
1103	Unraveling the relationship between the morphologies of metal-organic frameworks and the properties of their derived carbon materials. <b>2019</b> , 48, 7211-7217	15
1102	Defect-rich and ultrathin N doped carbon nanosheets as advanced trifunctional metal-free electrocatalysts for the ORR, OER and HER. <b>2019</b> , 12, 322-333	691
1101	Direct observation of active catalyst surface phases and the effect of dynamic self-optimization in NiFe-layered double hydroxides for alkaline water splitting. <b>2019</b> , 12, 572-581	240
1100	High-performance oxygen evolution electrocatalysis by boronized metal sheets with self-functionalized surfaces. <b>2019</b> , 12, 684-692	110
1099	Morphology controlled synthesis of low bandgap SnSe with high photodetectivity. <b>2019</b> , 11, 870-877	22
1098	Ambient electrochemical N <sub>2</sub> -to-NH <sub>3</sub> fixation enabled by Nb <sub>2</sub> O <sub>5</sub> nanowire array. <b>2019</b> , 6, 423-427	33
1097	One-step synthesis of nickel/iron layered double hydroxides with tungstate acid anions via flash nano-precipitation for the oxygen evolution reaction. <b>2019</b> , 3, 237-244	25
1096	Hollow carbon shells enhanced by confined ruthenium as cost-efficient and superior catalysts for the alkaline hydrogen evolution reaction. <b>2019</b> , 7, 6676-6685	45
1095	A MoS <sub>2</sub> nanosheet/reduced graphene oxide hybrid: an efficient electrocatalyst for electrocatalytic N <sub>2</sub> reduction to NH <sub>3</sub> under ambient conditions. <b>2019</b> , 7, 2524-2528	108
1094	A highly efficient and durable water splitting system: platinum sub-nanocluster functionalized nickel/iron layered double hydroxide as the cathode and hierarchical nickel/iron selenide as the anode. <b>2019</b> , 7, 2831-2837	42
1093	Selenium vacancy-rich CoSe <sub>2</sub> ultrathin nanomeshes with abundant active sites for electrocatalytic oxygen evolution. <b>2019</b> , 7, 2536-2540	61
1092	Highly efficient hydrogen evolution of platinum via tuning the interfacial dissolved-gas concentration. <b>2019</b> , 55, 1378-1381	18



1091	Active Pore-Edge Engineering of Single-Layer Niobium Diselenide Porous Nanosheets Electrode for Hydrogen Evolution. <b>2019</b> , 9,	9
1090	Embedding RhPx in N, P Co-Doped Carbon Nanoshells Through Synergetic Phosphorization and Pyrolysis for Efficient Hydrogen Evolution. <b>2019</b> , 29, 1901790	56
1089	Progress and Perspectives of Electrochemical CO Reduction on Copper in Aqueous Electrolyte. <b>2019</b> , 119, 7610-7672	1244
1088	Demonstration of electrocatalytic oxygen evolution activity of V4AlC3 (Mn+1AXnPhase) bulk powders. <b>2019</b> , 127, 25-28	2
1087	Engineering Two-Dimensional Materials and Their Heterostructures as High-Performance Electrocatalysts. <b>2019</b> , 2, 373-394	47
1086	Theoretical Screening of Single-Atom-Embedded MoSSe Nanosheets for Electrocatalytic N2 Fixation. <b>2019</b> , 123, 14501-14507	52
1085	Constructing Hierarchical Wire-on-Sheet Nanoarrays in Phase-Regulated Cerium-Doped Nickel Hydroxide for Promoted Urea Electro-oxidation. <b>2019</b> , 1, 103-110	56
1084	Dual tuning of nickel sulfide nanoflake array electrocatalyst through nitrogen doping and carbon coating for efficient and stable water splitting. <b>2019</b> , 9, 3099-3108	23
1083	Considerations for the scaling-up of water splitting catalysts. <b>2019</b> , 4, 430-433	387
1082	Revisiting the cold case of cold fusion. <b>2019</b> , 570, 45-51	21
1081	Promoting Subordinate, Efficient Ruthenium Sites with Interstitial Silicon for Pt-Like Electrocatalytic Activity. <b>2019</b> , 131, 11531	
1080	Negative Charging of Transition-Metal Phosphides via Strong Electronic Coupling for Destabilization of Alkaline Water. <b>2019</b> , 131, 11922-11926	12
1079	The Role of Supported Atomically Distributed Metal Species in Electrochemistry and How to Create Them. <b>2019</b> , 6, 3860-3877	9
1078	Revealing the hidden performance of metal phthalocyanines for CO2 reduction electrocatalysis by hybridization with carbon nanotubes. <b>2019</b> , 12, 2330-2334	42
1077	Oxygen Reduction Reaction Catalyzed by Black-Phosphorus-Supported Metal Nanoparticles: Impacts of Interfacial Charge Transfer. <b>2019</b> , 11, 24707-24714	20
1076	Greatly Enhanced Electrocatalytic N2 Reduction on TiO2 via V Doping. <b>2019</b> , 3, 1900356	117
1075	Beyond the Rate-Determining Step in the Oxygen Evolution Reaction over a Single-Crystalline IrO2(110) Model Electrode: Kinetic Scaling Relations. <b>2019</b> , 9, 6755-6765	66
1074	Recent Advances in Carbon-Based Bifunctional Oxygen Catalysts for Zinc-Air Batteries. <b>2019</b> , 2, 743-765	74

1073	Controlling Stability and Selectivity in the Competing Chlorine and Oxygen Evolution Reaction over Transition Metal Oxide Electrodes. <b>2019</b> , 6, 3401-3409	30
1072	Rational design of positive-hexagon-shaped two-dimensional ZIF-derived materials as improved bifunctional oxygen electrocatalysts for use as long-lasting rechargeable Zn/Air batteries. <b>2019</b> , 256, 117871	40
1071	Enhanced overall water electrolysis on a bifunctional perovskite oxide through interfacial engineering. <b>2019</b> , 318, 120-129	23
1070	Galvanic exchange carving growth of CoFe LDHs with enhanced water oxidation. <b>2019</b> , 44, 20085-20092	8
1069	Scanning Electrochemical Cell Microscopy (SECCM) Chronopotentiometry: Development and Applications in Electroanalysis and Electrocatalysis. <b>2019</b> , 91, 9229-9237	36
1068	Beyond the Traditional Volcano Concept: Overpotential-Dependent Volcano Plots Exemplified by the Chlorine Evolution Reaction over Transition-Metal Oxides. <b>2019</b> , 123, 16921-16928	29
1067	A silicon-doped iridium electrode prepared by magnetron-sputtering as an advanced electrocatalyst for overall water splitting in acidic media. <b>2019</b> , 3, 2321-2328	6
1066	Effect of Dissolved Glassware on the Structure-Sensitive Part of the Cu(111) Voltammogram in KOH. <b>2019</b> , 4, 1645-1649	19
1065	Efficient oxygen evolution on mesoporous IrOx nanosheets. <b>2019</b> , 9, 3697-3702	22
1064	Neutral-pH overall water splitting catalyzed efficiently by a hollow and porous structured ternary nickel sulfoselenide electrocatalyst. <b>2019</b> , 7, 16793-16802	43
1063	In Situ Coupling of Single Molecules Driven by Gold-Catalyzed Electrooxidation. <b>2019</b> , 58, 16008-16012	11
1062	Dual metal-free polymer reactive sites for the efficient degradation of diclofenac by visible light-driven oxygen reduction to superoxide radical and hydrogen peroxide. <b>2019</b> , 6, 2577-2590	22
1061	Direct Growth of CNTs@CoS Se on Carbon Cloth for Overall Water Splitting. <b>2019</b> , 12, 3792-3800	33
1060	A Fully Reversible Water Electrolyzer Cell Made Up from FeCoNi (Oxy)hydroxide Atomic Layers. <b>2019</b> , 9, 1901312	69
1059	Integrated Nanostructural Electrodes Based on Layered Double Hydroxides. <b>2019</b> , 2, 158-171	27
1058	Tremella-like Ni <sub>3</sub> S <sub>2</sub> /MnS with ultrathin nanosheets and abundant oxygen vacancies directly used for high speed overall water splitting. <b>2019</b> , 257, 117899	93
1057	High performance of CoP/NF electrocatalyst for oxygen evolution reaction. <b>2019</b> , 235, 121772	7
1056	Impact of Ir-Valence Control and Surface Nanostructure on Oxygen Evolution Reaction over a Highly Efficient Ir <sub>3</sub> O <sub>2</sub> Nanorod Catalyst. <b>2019</b> , 9, 6974-6986	56

1055	Activity and Selectivity Trends in Electrocatalytic Nitrate Reduction on Transition Metals. <b>2019</b> , 9, 7052-7064	129
1054	Artificial photosynthesis - concluding remarks. <b>2019</b> , 215, 439-451	10
1053	Plasmon-enhanced photocatalytic activity of Pt@Au and Pt@Cu nanoparticles in quantum size regime. <b>2019</b> , 21, 1	2
1052	In situ iron coating on nanocatalysts for efficient and durable oxygen evolution reaction. <b>2019</b> , 63, 103855	17
1051	Recent progress made in the mechanism comprehension and design of electrocatalysts for alkaline water splitting. <b>2019</b> , 12, 2620-2645	53 <sup>2</sup>
1050	Single-crystalline layered double hydroxides with rich defects and hierarchical structure by mild reduction for enhancing the oxygen evolution reaction. <b>2019</b> , 62, 1365-1370	53
1049	Composition-dependent CO <sub>2</sub> electrochemical reduction activity and selectivity on Au@Pd core-shell nanoparticles. <b>2019</b> , 7, 16954-16961	34
1048	Distorted 1T-ReS Nanosheets Anchored on Porous TiO Nanofibers for Highly Enhanced Photocatalytic Hydrogen Production. <b>2019</b> , 11, 23144-23151	31
1047	Phthalocyanine Precursors To Construct Atomically Dispersed Iron Electrocatalysts. <b>2019</b> , 9, 6252-6261	33
1046	An efficient ultrathin PtFeNi Nanowire/Ionic liquid conjugate electrocatalyst. <b>2019</b> , 256, 117828	26
1045	Unveiling the active sites of Ni-Fe phosphide/metaphosphate for efficient oxygen evolution under alkaline conditions. <b>2019</b> , 55, 7687-7690	74
1044	In situ construction of Ni enriched porous NiAl as long-lived electrode for hydrogen evolution at high current densities. <b>2019</b> , 489, 435-445	7
1043	WO nanosheets rich in oxygen vacancies for enhanced electrocatalytic N reduction to NH <sub>3</sub> . <b>2019</b> , 11, 19274-19277	7
1042	Ni <sub>1-x</sub> M <sub>x</sub> Se <sub>2</sub> (M = Fe, Co, Cu) nanowires as anodes for ammonia-borane electrooxidation and the derived Ni <sub>1-x</sub> M <sub>x</sub> Se <sub>2</sub> /Ni(OH) <sub>2</sub> ultrathin nanosheets as efficient electrocatalysts for oxygen evolution. <b>2019</b> , 7, 16372-16386	13
1041	Pt-Based Nanocrystal for Electrocatalytic Oxygen Reduction. <b>2019</b> , 31, e1808115	160
1040	In Situ Transmission Electron Microscopy for Energy Materials and Devices. <b>2019</b> , 31, e1900608	53
1039	Fe-doped CoNi <sub>0.5</sub> P Hierarchical Arrays as Efficient Bifunctional Electrocatalysts for Overall Water Splitting: Evolution of Morphology and Coordination of Catalytic Performance. <b>2019</b> , 4, 6744-6752	8
1038	Enhancing the electrocatalytic activity of NiMoO <sub>4</sub> through a post-phosphorization process for oxygen evolution reaction. <b>2019</b> , 129, 105725	8

1037	Interface and defect engineer of titanium dioxide supported palladium or platinum for tuning the activity and selectivity of electrocatalytic nitrogen reduction reaction. <b>2019</b> , 553, 126-135	26
1036	An anion exchange reaction: an effective approach to prepare alloyed Co-Fe bimetallic disulfide for improving the electrocatalytic activity. <b>2019</b> , 55, 7615-7618	1
1035	Ni-Metalloid (B, Si, P, As, and Te) Alloys as Water Oxidation Electrocatalysts. <b>2019</b> , 9, 1900796	46
1034	Activity-Stability Volcano Plots for Material Optimization in Electrocatalysis. <b>2019</b> , 11, 3234-3241	10
1033	Facile synthesis of Cu <sub>2</sub> MoS <sub>4</sub> nanosheet/multi-walled carbon nanotube composites as a high-efficiency electrocatalyst for hydrogen evolution. <b>2019</b> , 43, 9574-9582	10
1032	N,P-coordinated fullerene-like carbon nanostructures with dual active centers toward highly-efficient multi-functional electrocatalysis for CO <sub>2</sub> RR, ORR and Zn-air battery. <b>2019</b> , 7, 15271-15277	60
1031	Formation Mechanism of Epitaxial Palladium/Platinum Core/Shell Nanocatalysts in a One-Step Supercritical Synthesis. <b>2019</b> , 29, 1902214	7
1030	Carbon Defect Characterization of Nitrogen-Doped Reduced Graphene Oxide Electrocatalysts for the Two-Electron Oxygen Reduction Reaction. <b>2019</b> , 31, 3967-3973	53
1029	Stable Two-Dimensional Materials for Oxygen Reduction and Oxygen Evolution Reactions. <b>2019</b> , 4, 1410-1411	33
1028	Morphological Attributes Govern Carbon Dioxide Reduction on N-Doped Carbon Electrodes. <b>2019</b> , 3, 1719-1733	78
1027	Cathode-Introduced Atomic H* for Fe(II)-Complex Regeneration to Effective Electro-Fenton Process at a Natural pH. <b>2019</b> , 53, 6927-6936	31
1026	Inorganic Cyanogels and Their Derivatives for Electrochemical Energy Storage and Conversion. <b>2019</b> , 1, 158-170	42
1025	Building Up a Picture of the Electrocatalytic Nitrogen Reduction Activity of Transition Metal Single-Atom Catalysts. <b>2019</b> , 141, 9664-9672	390
1024	BC nanosheets decorated with in situ-derived boron-doped graphene quantum dots for high-efficiency ambient N fixation. <b>2019</b> , 55, 7406-7409	34
1023	Metallo(salen) complexes as versatile building blocks for the fabrication of molecular materials and devices with tuned properties. <b>2019</b> , 394, 104-134	49
1022	Surface-engineered cobalt oxide nanowires as multifunctional electrocatalysts for efficient Zn-Air batteries-driven overall water splitting. <b>2019</b> , 23, 1-7	26
1021	Mechanistic Insights on CO <sub>2</sub> Reduction Reactions at Platinum/[BMIM][BF <sub>4</sub> ] Interfaces from In Operando Spectroscopy. <b>2019</b> , 9, 6284-6292	21
1020	Fully Oxidized NiFe Layered Double Hydroxide with 100% Exposed Active Sites for Catalyzing Oxygen Evolution Reaction. <b>2019</b> , 9, 6027-6032	112

1019	Dual-Site Cascade Oxygen Reduction Mechanism on SnO /Pt-Cu-Ni for Promoting Reaction Kinetics. <b>2019</b> , 141, 9463-9467	37
1018	SO-Induced Selectivity Change in CO Electroreduction. <b>2019</b> , 141, 9902-9909	59
1017	Atomically dispersed platinum supported on curved carbon supports for efficient electrocatalytic hydrogen evolution. <b>2019</b> , 4, 512-518	419
1016	NiS <sub>2</sub> MoS <sub>2</sub> hetero-nanosheet array electrocatalysts for efficient overall water splitting. <b>2019</b> , 3, 2056-2066	37
1015	Deep insights into the exfoliation properties of MAX to MXenes and the hydrogen evolution performances of 2D MXenes. <b>2019</b> , 7, 15862-15870	31
1014	Enhanced Electrocatalytic Oxygen Evolution Activity by Tuning Both the Oxygen Vacancy and Orbital Occupancy of B-Site Metal Cation in NdNiO <sub>3</sub> . <b>2019</b> , 29, 1902449	35
1013	Characterization and corrosion behaviour of grade 2 titanium used in electrolyzers for hydrogen production. <b>2019</b> , 44, 15622-15633	5
1012	All-inorganic SrSnO <sub>3</sub> perovskite nanowires for efficient CO <sub>2</sub> electroreduction. <b>2019</b> , 62, 861-868	17
1011	Multilink F* Method for Combined Quantum Mechanical and Molecular Mechanical Calculations of Complex Systems. <b>2019</b> , 15, 4208-4217	6
1010	Pd-Fe dual-metal nanoparticles confined in the interface of carbon nanotubes/N-doped carbon for excellent catalytic performance. <b>2019</b> , 489, 477-484	41
1009	pH Effects on Hydrogen Evolution and Oxidation over Pt(111): Insights from First-Principles. <b>2019</b> , 9, 6194-6201	64
1008	Tungsten boride: a 2D multiple Dirac semimetal for the hydrogen evolution reaction. <b>2019</b> , 7, 8868-8873	30
1007	Ultrafine Dual-Phased Carbide Nanocrystals Confined in Porous Nitrogen-Doped Carbon Dodecahedrons for Efficient Hydrogen Evolution Reaction. <b>2019</b> , 31, e1900699	191
1006	Co Nanoislands Rooted on Co-N-C Nanosheets as Efficient Oxygen Electrocatalyst for Zn-Air Batteries. <b>2019</b> , 31, e1901666	232
1005	Trends in Oxygen Electrocatalysis of 3 d-Layered (Oxy)(Hydro)Oxides. <b>2019</b> , 11, 3423-3431	20
1004	MnO <sub>2</sub> nanowires anchored on mesoporous graphitic carbon nitride (MnO <sub>2</sub> @mpg-C <sub>3</sub> N <sub>4</sub> ) as a highly efficient electrocatalyst for the oxygen evolution reaction. <b>2019</b> , 44, 17995-18006	45
1003	Bi(OH)/PdBi Composite Nanochains as Highly Active and Durable Electrocatalysts for Ethanol Oxidation. <b>2019</b> , 19, 4752-4759	56
1002	Interfacial Sites between Cobalt Nitride and Cobalt Act as Bifunctional Catalysts for Hydrogen Electrochemistry. <b>2019</b> , 4, 1594-1601	83

1001	Mesoporous Mn-Doped FeP: Facile Synthesis and Enhanced Electrocatalytic Activity for Hydrogen Evolution in a Wide pH Range. <b>2019</b> ,	3
1000	Promoting Subordinate, Efficient Ruthenium Sites with Interstitial Silicon for Pt-Like Electrocatalytic Activity. <b>2019</b> , 58, 11409-11413	82
999	Laser-Assisted Doping and Architecture Engineering of Fe O Nanoparticles for Highly Enhanced Oxygen Evolution Reaction. <b>2019</b> , 12, 3562-3570	16
998	Insights into the role of active site density in the fuel cell performance of Co-N-C catalysts. <b>2019</b> , 256, 117849	58
997	Double perovskite PrBaCo <sub>2</sub> O <sub>5.5</sub> : An efficient and stable electrocatalyst for hydrogen evolution reaction. <b>2019</b> , 427, 194-200	26
996	Promoted synergy in core-branch CoP@NiFeDH nanohybrids for efficient electrochemical-/ photovoltage-driven overall water splitting. <b>2019</b> , 63, 103821	50
995	Tweaking the Interplay among Galvanic Exchange, Oxidative Etching, and Seed-Mediated Deposition toward Architectural Control of Multimetallic Nanoelectrocatalysts. <b>2019</b> , 11, 23482-23494	5
994	NiFe Alloy Nanotube Arrays as Highly Efficient Bifunctional Electrocatalysts for Overall Water Splitting at High Current Densities. <b>2019</b> , 11, 24096-24106	44
993	Activating Hematite Nanoplates via Partial Reduction for Electrocatalytic Oxygen Reduction Reaction. <b>2019</b> , 7, 11841-11849	18
992	Negative Charging of Transition-Metal Phosphides via Strong Electronic Coupling for Destabilization of Alkaline Water. <b>2019</b> , 58, 11796-11800	101
991	Template-assisted fabrication of Ni nanowire arrays for high efficient oxygen evolution reaction. <b>2019</b> , 318, 91-99	2
990	Insight into the design of defect electrocatalysts: From electronic structure to adsorption energy. <b>2019</b> , 31, 47-68	173
989	Ultrathin nickel-cobalt inorganic-organic hydroxide hybrid nanobelts as highly efficient electrocatalysts for oxygen evolution reaction. <b>2019</b> , 318, 966-976	12
988	Controlled synthesis of single cobalt atom catalysts via a facile one-pot pyrolysis for efficient oxygen reduction and hydrogen evolution reactions. <b>2019</b> , 64, 1095-1102	37
987	How to Effectively Utilize MOFs for Electrocatalysis. <b>2019</b> , 4, 1443-1445	53
986	Engineering hierarchical NiFe-layered double hydroxides derived phosphosulfide for high-efficiency hydrogen evolving electrocatalysis. <b>2019</b> , 44, 16378-16386	11
985	Nanoporous PalladiumSilver Surface Alloys as Efficient and pH-Universal Catalysts for the Hydrogen Evolution Reaction. <b>2019</b> , 4, 1379-1386	44
984	N,P co-coordinated Fe species embedded in carbon hollow spheres for oxygen electrocatalysis. <b>2019</b> , 7, 14732-14742	50

983	Advanced Non-metallic Catalysts for Electrochemical Nitrogen Reduction under Ambient Conditions. <b>2019</b> , 25, 12464-12485	40
982	Electrode Materials for Rechargeable Zinc-Ion and Zinc-Air Batteries: Current Status and Future Perspectives. <b>2019</b> , 2, 395-427	69
981	High-Concentration Single Atomic Pt Sites on Hollow Cu <sub>x</sub> for Selective O <sub>2</sub> Reduction to H <sub>2</sub> O <sub>2</sub> in Acid Solution. <b>2019</b> , 5, 2099-2110	152
980	Activating Layered Double Hydroxide with Multivacancies by Memory Effect for Energy-Efficient Hydrogen Production at Neutral pH. <b>2019</b> , 4, 1412-1418	64
979	Rationally engineered active sites for efficient and durable hydrogen generation. <b>2019</b> , 10, 2281	34
978	Host-guest chemistry between cyclodextrin and a hydrogen evolution catalyst cobaloxime. <b>2019</b> , 43, 10087-10092	8
977	A surface carbonization strategy towards MoS <sub>2</sub> microspheres with enhanced electrochemical hydrogen evolution activity. <b>2019</b> , 43, 9583-9588	4
976	Electrospun Carbon Nanofiber Sprinkled with Co <sub>3</sub> O <sub>4</sub> as an Efficient Electrocatalyst for Oxygen Reduction Reaction in Alkaline Medium. <b>2019</b> , 4, 5160-5167	5
975	A novel strategy for 2D/2D NiS/graphene heterostructures as efficient bifunctional electrocatalysts for overall water splitting. <b>2019</b> , 254, 471-478	77
974	Prospects and Challenges for Solar Fertilizers. <b>2019</b> , 3, 1578-1605	54
973	Atomic Pillar Effect in Pd <sub>x</sub> NbS <sub>2</sub> To Boost Basal Plane Activity for Stable Hydrogen Evolution. <b>2019</b> , 31, 4726-4731	21
972	ZIF-Derived Carbon Nanoarchitecture as a Bifunctional pH-Universal Electrocatalyst for Energy-Efficient Hydrogen Evolution. <b>2019</b> , 7, 10044-10051	40
971	Understanding the high activity of mildly reduced graphene oxide electrocatalysts in oxygen reduction to hydrogen peroxide. <b>2019</b> , 6, 1409-1415	30
970	Ordered Mesoporous Metastable $\gamma$ -MoC1 $\bar{4}$ with Enhanced Water Dissociation Capability for Boosting Alkaline Hydrogen Evolution Activity. <b>2019</b> , 29, 1901217	48
969	Enhancing Catalytic Activity of Titanium Oxide in Lithium-Sulfur Batteries by Band Engineering. <b>2019</b> , 9, 1900953	210
968	Nitrogen-Doped Porous Carbon Supported Nonprecious Metal Single-Atom Electrocatalysts: from Synthesis to Application. <b>2019</b> , 3, 1900159	137
967	Engineering Ternary Copper-Cobalt Sulfide Nanosheets as High-performance Electrocatalysts toward Oxygen Evolution Reaction. <b>2019</b> , 9, 459	12
966	Switching Co/N/C Catalysts for Heterogeneous Catalysis and Electrocatalysis by Controllable Pyrolysis of Cobalt Porphyrin. <b>2019</b> , 15, 282-290	12

965	Low-cost high-performance hydrogen evolution electrocatalysts based on Pt-CoP polyhedra with low Pt loading in both alkaline and neutral media. <b>2019</b> , 48, 8920-8930	12
964	Defect-Rich Heterogeneous MoS/NiS Nanosheets Electrocatalysts for Efficient Overall Water Splitting. <b>2019</b> , 6, 1900246	278
963	Metal Ionic Liquids Produce Metal-Dispersed Carbon-Nitrogen Networks for Efficient CO <sub>2</sub> Electroreduction. <b>2019</b> , 11, 3166-3170	3
962	Quantum Dots Based Photocatalytic Hydrogen Evolution. <b>2019</b> , 59, 762-773	11
961	Understanding the strain effect of Au@Pd nanocatalysts by in situ surface-enhanced Raman spectroscopy. <b>2019</b> , 55, 8824-8827	9
960	Design strategies for developing non-precious metal based bi-functional catalysts for alkaline electrolyte based zinc-air batteries. <b>2019</b> , 6, 1812-1827	52
959	Recent advances in transition metal-based electrocatalysts for alkaline hydrogen evolution. <b>2019</b> , 7, 14971-15005	281
958	Amine-assisted exfoliation and electrical conductivity modulation toward few-layer FePS <sub>3</sub> nanosheets for efficient hydrogen evolution. <b>2019</b> , 7, 13928-13934	20
957	The electronic structure underlying electrocatalysis of two-dimensional materials. <b>2019</b> , 9, e1418	11
956	An ingenious approach for ZIFs derived N-doped hierarchical porous carbon hybrids with FeCo alloy nanoparticles as efficient bifunctional oxygen electrocatalysts. <b>2019</b> , 487, 496-502	20
955	Single Mo atoms supported on N-Doped carbon with N/C edge-site for enhanced electrochemical hydrogen evolution. <b>2019</b> , 44, 14861-14868	18
954	Ultrafine and highly-dispersed bimetal Ni <sub>2</sub> P/Co <sub>2</sub> P encapsulated by hollow N-doped carbon nanospheres for efficient hydrogen evolution. <b>2019</b> , 44, 14908-14917	66
953	Advantageous crystalline/amorphous phase boundary for enhanced electrochemical water oxidation. <b>2019</b> , 12, 2443-2454	172
952	Assembly of Copper Phthalocyanine on TiO Nanorod Arrays as Co-catalyst for Enhanced Photoelectrochemical Water Splitting. <b>2019</b> , 7, 334	12
951	Generating Defect-Rich Bismuth for Enhancing the Rate of Nitrogen Electroreduction to Ammonia. <b>2019</b> , 58, 9464-9469	178
950	Understanding signal amplification strategies of nanostructured electrochemical sensors for environmental pollutants. <b>2019</b> , 17, 56-64	15
949	Machine Learning for Computational Heterogeneous Catalysis. <b>2019</b> , 11, 3581-3601	127
948	Ethylene-glycol ligand environment facilitates highly efficient hydrogen evolution of Pt/CoP through proton concentration and hydrogen spillover. <b>2019</b> , 12, 2298-2304	106



947	Chestnut-like copper cobalt phosphide catalyst for all-pH hydrogen evolution reaction and alkaline water electrolysis. <b>2019</b> , 7, 14271-14279	46
946	CoNi based alloy/oxides@N-doped carbon core-shell dendrites as complementary water splitting electrocatalysts with significantly enhanced catalytic efficiency. <b>2019</b> , 254, 634-646	59
945	Promoting hydrogen-evolution activity and stability of perovskite oxides via effectively lattice doping of molybdenum. <b>2019</b> , 312, 128-136	27
944	Stability of Pd clusters supported on pristine, B-doped, and defective graphene quantum dots, and their reactivity toward oxygen adsorption: A DFT analysis. <b>2019</b> , 93, 55-61	11
943	Recent Studies on Bifunctional Perovskite Electrocatalysts in Oxygen Evolution, Oxygen Reduction, and Hydrogen Evolution Reactions under Alkaline Electrolyte. <b>2019</b> , 59, 708-719	10
942	Generating Defect-Rich Bismuth for Enhancing the Rate of Nitrogen Electroreduction to Ammonia. <b>2019</b> , 131, 9564-9569	30
941	Pyrite-type ruthenium disulfide with tunable disorder and defects enables ultra-efficient overall water splitting. <b>2019</b> , 7, 14222-14232	32
940	Ultra-Small Molybdenum Carbide Nanoparticles in situ Entrapped in Mesoporous Carbon Spheres as Efficient Catalysts for Hydrogen Evolution. <b>2019</b> , 11, 2643-2648	12
939	When ternary PdCuP alloys meet ultrathin nanowires: Synergic boosting of catalytic performance in ethanol electrooxidation. <b>2019</b> , 253, 271-277	49
938	3-Dimensional flower-like clusters of CoNiP nanofoils in-situ grown on randomly-dispersed rGO-Nanosheets with superior electrocatalysis for hydrogen evolution reactions. <b>2019</b> , 44, 13195-13204	10
937	Quasi-one-dimensional Mo chains for efficient hydrogen evolution reaction. <b>2019</b> , 61, 194-200	27
936	Density functional theory calculations: A powerful tool to simulate and design high-performance energy storage and conversion materials. <b>2019</b> , 29, 247-255	37
935	Hot electron-driven electrocatalytic hydrogen evolution reaction on metal-semiconductor nanodiode electrodes. <b>2019</b> , 9, 6208	7
934	Nonlinear Optical Response of Graphene Oxide Langmuir-Blodgett Film as Saturable Absorbers. <b>2019</b> , 9,	13
933	FeCo/FeCoNi/N-doped carbon nanotubes grafted polyhedron-derived hybrid fibers as bifunctional oxygen electrocatalysts for durable rechargeable zinc-air battery. <b>2019</b> , 254, 26-36	107
932	Effectively Increased Efficiency for Electroreduction of Carbon Monoxide Using Supported Polycrystalline Copper Powder Electrocatalysts. <b>2019</b> , 9, 4709-4718	47
931	A unique sandwich structure of a CoMnP/Ni <sub>2</sub> P/NiFe electrocatalyst for highly efficient overall water splitting. <b>2019</b> , 7, 12325-12332	38
930	Comparison of Pt/C with Benchmark Pt/C: Metal Dissolution and Their Surface Interactions. <b>2019</b> , 2, 3131-3141	28

929	Coupling a Low Loading of IrP, PtP, or PdP with Heteroatom-Doped Nanocarbon for Overall Water-Splitting Cells and Zinc-Air Batteries. <b>2019</b> , 11, 16461-16473	24
928	In Situ Imaging Facet-Induced Spatial Heterogeneity of Electrocatalytic Reaction Activity at the Subparticle Level via Electrochemiluminescence Microscopy. <b>2019</b> , 91, 6829-6835	22
927	Oxygen Vacancies of Cr-Doped CeO Nanorods That Efficiently Enhance the Performance of Electrocatalytic N Fixation to NH under Ambient Conditions. <b>2019</b> , 58, 5423-5427	61
926	Boron Nanosheet: An Elemental Two-Dimensional (2D) Material for Ambient Electrocatalytic N <sub>2</sub> -to-NH <sub>3</sub> Fixation in Neutral Media. <b>2019</b> , 9, 4609-4615	180
925	First-principles modeling of GaN(0001)/water interface: Effect of surface charging. <b>2019</b> , 150, 154703	5
924	Hierarchical Graphdiyne@NiFe layered double hydroxide heterostructures as a bifunctional electrocatalyst for overall water splitting. <b>2019</b> , 794, 261-267	41
923	A facile sequential ion exchange strategy to synthesize CoSe/FeSe double-shelled hollow nanocuboids for the highly active and stable oxygen evolution reaction. <b>2019</b> , 11, 10738-10745	51
922	Continuous oxygen vacancy engineering of the Co <sub>3</sub> O <sub>4</sub> layer for an enhanced alkaline electrocatalytic hydrogen evolution reaction. <b>2019</b> , 7, 13506-13510	50
921	Edge-Enhanced Oxygen Evolution Reactivity at Ultrathin, Au-Supported Fe <sub>2</sub> O <sub>3</sub> Electrocatalysts. <b>2019</b> , 9, 5375-5382	26
920	Electrochemical Synthesis of High-Value Chemicals: Detection of Key Reaction Intermediates and Products Combining Gas Chromatography/Mass Spectrometry and in Situ Infrared Spectroscopy. <b>2019</b> ,	2
919	Activating Three-Dimensional Networks of Fe@Ni Nanofibers via Fast Surface Modification for Efficient Overall Water Splitting. <b>2019</b> , 11, 18342-18348	19
918	An Integrated Single-Electrode Method Reveals the Template Roles of Atomic Steps: Disturb Interfacial Water Networks and Thus Affect the Reactivity of Electrocatalysts. <b>2019</b> , 141, 8516-8526	12
917	Na-doped ruthenium perovskite electrocatalysts with improved oxygen evolution activity and durability in acidic media. <b>2019</b> , 10, 2041	109
916	Metal-organic framework-derived hierarchical MoS <sub>2</sub> /CoS <sub>2</sub> nanotube arrays as pH-universal electrocatalysts for efficient hydrogen evolution. <b>2019</b> , 7, 13339-13346	81
915	Engineering of molybdenum sulfide nanostructures towards efficient electrocatalytic hydrogen evolution. <b>2019</b> , 44, 15009-15016	18
914	A General Method to Probe Oxygen Evolution Intermediates at Operating Conditions. <b>2019</b> , 3, 1498-1509	115
913	Study on catalyst selection for electrochemical valorization of glycerol. <b>2019</b> , 3, 1892-1915	39
912	Synergistic electrocatalytic N <sub>2</sub> reduction using a PTCA nanorod/GO hybrid. <b>2019</b> , 7, 12446-12450	19

911	Data Mining the C-C Cross-Coupling Genome. <b>2019</b> , 11, 4096-4107	10
910	Efficiently improving oxygen evolution activity using hierarchical Ni(OH) <sub>2</sub> /polypyrrole/graphene oxide nanosheets. <b>2019</b> , 485, 554-563	12
909	Challenges and trends in developing technology for electrochemically reducing CO <sub>2</sub> in solid polymer electrolyte membrane reactors. <b>2019</b> , 32, 178-186	20
908	Plasmon-driven catalysis of adsorbed p-nitroaniline (PNA) by surface-enhanced Raman scattering (SERS): Platinum versus silver. <b>2019</b> , 687, 17-24	0
907	Is Thermodynamics a Good Descriptor for the Activity? Re-Investigation of Sabatier's Principle by the Free Energy Diagram in Electrocatalysis. <b>2019</b> , 9, 5320-5329	59
906	Decoupling half-reactions of electrolytic water splitting by integrating a polyaniline electrode. <b>2019</b> , 7, 13149-13153	25
905	Identifying Catalytic Active Sites of Trimolybdenum Phosphide (Mo <sub>3</sub> P) for Electrochemical Hydrogen Evolution. <b>2019</b> , 9, 1900516	25
904	In situ embedding Co <sub>9</sub> S <sub>8</sub> into nitrogen and sulfur codoped hollow porous carbon as a bifunctional electrocatalyst for oxygen reduction and hydrogen evolution reactions. <b>2019</b> , 254, 186-193	87
903	Single Atoms on Graphene for Energy Storage and Conversion. <b>2019</b> , 3, 1800443	42
902	Catalytic Ru containing Pt <sub>3</sub> Mn nanocrystals enclosed with high-indexed facets: Surface alloyed Ru makes Pt more active than Ru particles for ethylene glycol oxidation. <b>2019</b> , 253, 11-20	35
901	Integration of Semiconductor Oxide and a Microporous (3,10)-Connected Co-Based Metal-Organic Framework for Enhanced Oxygen Evolution Reaction. <b>2019</b> , 58, 5837-5843	48
900	Dynamic Evolution of Atomically Dispersed Cu Species for CO <sub>2</sub> Photoreduction to Solar Fuels. <b>2019</b> , 9, 4824-4833	128
899	Sea urchin-like Ni <sub>3</sub> S <sub>2</sub> sulfide architectures as efficient electrocatalysts for the oxygen evolution reaction. <b>2019</b> , 7, 12350-12357	52
898	Greatly improved HER electrocatalytic activity by the composite of CoSe <sub>2</sub> and N, S-dual doped graphitic carbon. <b>2019</b> , 44, 13424-13431	7
897	Effective surface termination with Au on PtCo@Pt core-shell nanoparticle: Microstructural investigations and oxygen reduction reaction properties. <b>2019</b> , 842, 1-7	11
896	Thin Nickel Layer with Embedded WC Nanoparticles for Efficient Oxygen Evolution. <b>2019</b> , 2, 3452-3460	9
895	Construction of Pd@Ni interfaces assisted by laser irradiation for enhanced electrocatalytic N <sub>2</sub> reduction reaction. <b>2019</b> , 7, 12627-12634	57
894	What would it take for renewably powered electrosynthesis to displace petrochemical processes? <i>Science</i> , <b>2019</b> , 364,	33-3 749

893	Co-Modified MoS <sub>2</sub> Hybrids as Superior Bifunctional Electrocatalysts for Water Splitting Reactions: Integrating Multiple Active Components in One. <b>2019</b> , 6, 1900372	11
892	Simultaneous Achieving of High Faradaic Efficiency and CO Partial Current Density for CO <sub>2</sub> Reduction via Robust, Noble-Metal-Free Zn Nanosheets with Favorable Adsorption Energy. <b>2019</b> , 9, 1900276	51
891	Atomically Resolved Anisotropic Electrochemical Shaping of Nano-electrocatalyst. <b>2019</b> , 19, 4919-4927	20
890	Synthesis of Cu/CeO <sub>2-x</sub> Nanocrystalline Heterodimers with Interfacial Active Sites To Promote CO <sub>2</sub> Electroreduction. <b>2019</b> , 9, 5035-5046	71
889	Hierarchically Coupled Ni:FeOOH Nanosheets on 3D N-Doped Graphite Foam as Self-Supported Electrocatalysts for Efficient and Durable Water Oxidation. <b>2019</b> , 9, 5025-5034	55
888	A copper single-atom catalyst towards efficient and durable oxygen reduction for fuel cells. <b>2019</b> , 7, 16690-16695	83
887	Single and double boron atoms doped nanoporous CN-h2D electrocatalysts for highly efficient N reduction reaction: a density functional theory study. <b>2019</b> , 30, 335403	51
886	In situ engineering bi-metallic phospho-nitride bi-functional electrocatalysts for overall water splitting. <b>2019</b> , 254, 414-423	69
885	Artificial photosynthesis: opportunities and challenges of molecular catalysts. <b>2019</b> , 48, 2216-2264	363
884	One-pot aqueous synthesis of ultrathin trimetallic PdPtCu nanosheets for the electrooxidation of alcohols. <b>2019</b> , 21, 2367-2374	46
883	Electrochemical Reduction of Carbon Dioxide to Formate on Palladium-Copper Alloy Nanoparticulate Electrode. <b>2019</b> , 87, 134-138	11
882	Structure-Activity Relationship of Defective Metal-Based Photocatalysts for Water Splitting: Experimental and Theoretical Perspectives. <b>2019</b> , 6, 1900053	126
881	NiCoMo Hydroxide Nanosheet Arrays Synthesized via Chloride Corrosion for Overall Water Splitting. <b>2019</b> , 4, 952-959	152
880	Voltammetric Determination of the Stochastic Formation Rate and Geometry of Individual H <sub>2</sub> and O <sub>2</sub> Bubble Nuclei. <b>2019</b> , 13, 6330-6340	29
879	Searching General Sufficient-and-Necessary Conditions for Ultrafast Hydrogen-Evolving Electrocatalysis. <b>2019</b> , 29, 1900704	65
878	Nitrogen treatment generates tunable nanohybridization of Ni <sub>5</sub> P <sub>4</sub> nanosheets with nickel hydr(oxy)oxides for efficient hydrogen production in alkaline, seawater and acidic media. <b>2019</b> , 251, 181-194	155
877	CoxNi <sub>1-x</sub> nanoalloys on N-doped carbon nanofibers: Electronic regulation toward efficient electrochemical CO <sub>2</sub> reduction. <b>2019</b> , 372, 277-286	15
876	Heterogeneous electrocatalysts design for nitrogen reduction reaction under ambient conditions. <b>2019</b> , 27, 69-90	154

875	Anderson polyoxometalate supported Cu(H <sub>2</sub> O)(phen) complex as an electrocatalyst for hydrogen evolution reaction in neutral medium. <b>2019</b> , 172, 80-86	4
874	Two-dimensional amorphous nanomaterials: synthesis and applications. <b>2019</b> , 6, 032002	40
873	Cobalt phthalocyanine coordinated to pyridine-functionalized carbon nanotubes with enhanced CO <sub>2</sub> electroreduction. <b>2019</b> , 251, 112-118	78
872	In situ construction of graphdiyne/CuS heterostructures for efficient hydrogen evolution reaction. <b>2019</b> , 3, 821-828	24
871	Ultrafine Metallic Nickel Domains and Reduced Molybdenum States Improve Oxygen Evolution Reaction of NiFeMo Electrocatalysts. <b>2019</b> , 15, e1804764	18
870	Oxygen Reduction Reactions of Fe-N-C Catalysts: Current Status and the Way Forward. <b>2019</b> , 2, 252-276	70
869	Metallic Ni <sub>3</sub> N Quantum Dots as a Synergistic Promoter for NiO Nanosheet toward Efficient Oxygen Reduction Electrocatalysis. <b>2019</b> , 123, 8633-8639	10
868	Nitrogen and phosphorous co-doped graphitic carbon encapsulated ultrafine OsP nanoparticles: a pH universal highly durable catalyst for hydrogen evolution reaction. <b>2019</b> , 55, 4399-4402	13
867	Oxygen Evolution Reaction Activity in IrO <sub>2</sub> /SrIrO <sub>3</sub> Catalysts: Correlations between Structural Parameters and the Catalytic Activity. <b>2019</b> , 10, 1516-1522	16
866	Engineering MoS <sub>2</sub> Basal Planes for Hydrogen Evolution via Synergistic Ruthenium Doping and Nanocarbon Hybridization. <b>2019</b> , 6, 1900090	87
865	Mo-Doped Cobalt Phosphide Nanosheets for Efficient Hydrogen Generation in an Alkaline Media. <b>2019</b> , 7, 1900021	13
864	Modulating the Electronic Structure of Single-Atom Catalysts on 2D Nanomaterials for Enhanced Electrocatalytic Performance. <b>2019</b> , 3, 1800438	60
863	Transition metal coordinated framework porphyrin for electrocatalytic oxygen reduction. <b>2019</b> , 30, 911-914	30
862	Conformal dispersed cobalt nanoparticles in hollow carbon nanotube arrays for flexible Zn-air and Al-air batteries. <b>2019</b> , 369, 988-995	77
861	Single-Atom Catalysts for Photocatalytic Reactions. <b>2019</b> , 7, 6430-6443	73
860	Support and Interface Effects in Water-Splitting Electrocatalysts. <b>2019</b> , 31, e1808167	314
859	NiRh nanosponges with highly efficient electrocatalytic performance for hydrogen evolution reaction. <b>2019</b> , 789, 163-173	15
858	Importance of Electrocatalyst Morphology for the Oxygen Reduction Reaction. <b>2019</b> , 6, 2600-2614	28

857	Cobalt oxide-based nanoarchitectures for electrochemical energy applications. <b>2019</b> , 103, 596-677	97
856	Iridium-Based Cubic Nanocages with 1.1-nm-Thick Walls: A Highly Efficient and Durable Electrocatalyst for Water Oxidation in an Acidic Medium. <b>2019</b> , 58, 7244-7248	59
855	Hexagonal boron nitride nanosheet for effective ambient N <sub>2</sub> fixation to NH <sub>3</sub> . <b>2019</b> , 12, 919-924	88
854	Progress in Electrocatalytic Hydrogen Evolution Based on Monolayer Molybdenum Disulfide. <b>2019</b> , 7, 131	9
853	Ir-Au Bimetallic Nanoparticle Modified Silicon Nanowires with Ultralow Content of Ir for Hydrogen Evolution Reaction. <b>2019</b> , 11, 2126-2130	10
852	Engineering the electronic structure of Co <sub>3</sub> O <sub>4</sub> by carbon-doping for efficient overall water splitting. <b>2019</b> , 303, 316-322	65
851	Cobalt-Ruthenium Nanoalloys Parceled in Porous Nitrogen-Doped Graphene as Highly Efficient Difunctional Catalysts for Hydrogen Evolution Reaction and Hydrolysis of Ammonia Borane. <b>2019</b> , 7, 7014-7023	70
850	Fe <sub>3</sub> N <sub>4</sub> electrocatalyst with dense active sites and efficient mass transport for high-performance proton exchange membrane fuel cells. <b>2019</b> , 2, 259-268	580
849	NiS nanodotted carnation-like CoS for enhanced electrocatalytic water splitting. <b>2019</b> , 55, 3781-3784	38
848	Electronic Structure Engineering of LiCoO <sub>2</sub> toward Enhanced Oxygen Electrocatalysis. <b>2019</b> , 9, 1803482	63
847	Facile and Large-Scale Fabrication of Sub-3 nm PtNi Nanoparticles Supported on Porous Carbon Sheet: A Bifunctional Material for the Hydrogen Evolution Reaction and Hydrogenation. <b>2019</b> , 25, 7191-7200	12
846	Co <sub>2</sub> Ni alloy/N-doped CNTs composite as efficient hydrogen evolution reaction catalyst in alkaline medium. <b>2019</b> , 791, 779-785	25
845	Electroreduction of CO <sub>2</sub> to CO Paired with 1,2-Propanediol Oxidation to Lactic Acid. Toward an Economically Feasible System. <b>2019</b> , 58, 6195-6202	19
844	Hierarchical Edge-Rich Nickel Phosphide Nanosheet Arrays as Efficient Electrocatalysts toward Hydrogen Evolution in Both Alkaline and Acidic Conditions. <b>2019</b> , 7, 7804-7811	32
843	Atomically dispersed nickel-nitrogen-sulfur species anchored on porous carbon nanosheets for efficient water oxidation. <b>2019</b> , 10, 1392	280
842	Chemical and structural origin of lattice oxygen oxidation in Co <sub>3</sub> Zn oxyhydroxide oxygen evolution electrocatalysts. <b>2019</b> , 4, 329-338	542
841	Investigation of the correlation between the phase structure and activity of Ni <sub>3</sub> Mo <sub>2</sub> derived electrocatalysts for the hydrogen evolution reaction. <b>2019</b> , 7, 10338-10345	14
840	Surface reorganization engineering of the N-doped MoS <sub>2</sub> heterostructures MoO <sub>x</sub> @N-doped MoS <sub>2</sub> by in situ electrochemical oxidation activation for efficient oxygen evolution reaction. <b>2019</b> , 7, 10572-10580	25

839	Conductive metal-organic framework nanowire arrays for electrocatalytic oxygen evolution. <b>2019</b> , 7, 10431-10438	72
838	Recent Progress in Defective Carbon-Based Oxygen Electrode Materials for Rechargeable Zinc-Air Batteries. <b>2019</b> , 2, 509-523	26
837	Carbon-Based Substrates for Highly Dispersed Nanoparticle and Even Single-Atom Electrocatalysts. <b>2019</b> , 3, 1900050	52
836	Outlining the Scaling-Based and Scaling-Free Optimization of Electrocatalysts. <b>2019</b> , 9, 4218-4225	52
835	Plasma-treated sponge-like NiAu nanoalloy for enhancing electrocatalytic performance in hydrogen evolution reaction. <b>2019</b> , 337, 90-96	6
834	Self-reconstruction mechanism in NiSe <sub>2</sub> nanoparticles/carbon fiber paper bifunctional electrocatalysts for water splitting. <b>2019</b> , 305, 37-46	32
833	3D self-branched zinc-cobalt Oxide@N-doped carbon hollow nanowall arrays for high-performance asymmetric supercapacitors and oxygen electrocatalysis. <b>2019</b> , 23, 653-663	56
832	Metal-Organic Framework-Derived Co <sub>x</sub> Fe <sub>1-x</sub> P Nanoparticles Encapsulated in N-Doped Carbon as Efficient Bifunctional Electrocatalysts for Overall Water Splitting. <b>2019</b> , 2, 2734-2742	30
831	One-step fabrication of trimetallic core-shell Au@PdAuCu mesoporous nanospheres for ethanol electrooxidation. <b>2019</b> , 21, 2043-2051	33
830	Mechanistic Understanding of Size-Dependent Oxygen Reduction Activity and Selectivity over Pt/CNT Nanocatalysts. <b>2019</b> , 2019, 3210-3217	12
829	One-Dimensional Metal Nanostructures: From Colloidal Syntheses to Applications. <b>2019</b> , 119, 8972-9073	148
828	Engineering the electronic structure of single atom Ru sites via compressive strain boosts acidic water oxidation electrocatalysis. <b>2019</b> , 2, 304-313	420
827	ZnO Colloidal Nanocrystal Clusters as Efficient and Durable Bifunctional Electrocatalysts For Full Water Splitting. <b>2019</b> , 5, 761-765	11
826	Recent Advancements Towards Closing the Gap between Electrocatalysis and Battery Science Communities: The Computational Lithium Electrode and Activity-Stability Volcano Plots. <b>2019</b> , 12, 2330-2344	26
825	Thermodynamic Considerations for Optimizing Selective CO Reduction by Molecular Catalysts. <b>2019</b> , 5, 580-588	59
824	Iridium-Based Cubic Nanocages with 1.1-nm-Thick Walls: A Highly Efficient and Durable Electrocatalyst for Water Oxidation in an Acidic Medium. <b>2019</b> , 131, 7322-7326	6
823	Hierarchical tri-functional electrocatalysts derived from bimetallic-imidazolate framework for overall water splitting and rechargeable zinc-air batteries. <b>2019</b> , 7, 8641-8652	35
822	Metal-organic framework composites and their electrochemical applications. <b>2019</b> , 7, 7301-7327	186

821	Identifying the Activation of Bimetallic Sites in NiCo S @g-C N -CNT Hybrid Electrocatalysts for Synergistic Oxygen Reduction and Evolution. <b>2019</b> , 31, e1808281	221
820	Nonsiliceous Mesoporous Materials: Design and Applications in Energy Conversion and Storage. <b>2019</b> , 15, e1805277	10
819	Mesoporous AgPdPt Nanotubes as Electrocatalysts for the Oxygen Reduction Reaction. <b>2019</b> , 2, 1876-1882	11
818	Opportunities for Atomic Layer Deposition in Emerging Energy Technologies. <b>2019</b> , 4, 908-925	52
817	Tuning orbital orientation endows molybdenum disulfide with exceptional alkaline hydrogen evolution capability. <b>2019</b> , 10, 1217	218
816	Toward practical solar hydrogen production - an artificial photosynthetic leaf-to-farm challenge. <b>2019</b> , 48, 1908-1971	415
815	Core-Shell Architecture Advances Oxygen Electrocatalysis. <b>2019</b> , 5, 260-262	8
814	The Role of Defect Sites in Nanomaterials for Electrocatalytic Energy Conversion. <b>2019</b> , 5, 1371-1397	170
813	Boosting electrocatalysis by heteroatom doping and oxygen vacancies in hierarchical Ni-Co based nitride phosphide hybrid. <b>2019</b> , 422, 33-41	24
812	Modeling Solid State Batteries. <b>2019</b> , 1-18	
811	Electronic Tuning of Cobalt Porphyrins Immobilized on Nitrogen-Doped Graphene for CO <sub>2</sub> Reduction. <b>2019</b> , 2, 2435-2440	21
810	Electroactive Edge-Site-Enriched $\text{Co}_{0.9}\text{Fe}_{0.1}(\text{OH})_x$ Nanoplates for Efficient Overall Water Splitting. <b>2019</b> , 6, 2415-2422	4
809	New frontiers for the materials genome initiative. <b>2019</b> , 5,	171
808	Pt-embedded in monolayer g-C <sub>3</sub> N <sub>4</sub> as a promising single-atom electrocatalyst for ammonia synthesis. <b>2019</b> , 7, 11908-11914	45
807	Electrochemical CO <sub>2</sub> reduction using alkaline membrane electrode assembly on various metal electrodes. <b>2019</b> , 31, 244-250	44
806	Concerted proton-electron transfer reactions in the Marcus inverted region. <i>Science</i> , <b>2019</b> , 364, 471-475 <sup>33,3</sup>	63
805	Energy-saving hydrogen production coupling urea oxidation over a bifunctional nickel-molybdenum nanotube array. <b>2019</b> , 60, 894-902	125
804	Direct Synthesis of Metal-Doped Phosphorene with Enhanced Electrocatalytic Hydrogen Evolution. <b>2019</b> , 3, 1900083	34



803	Projection-Based Wavefunction-in-DFT Embedding. <b>2019</b> , 52, 1359-1368	60
802	Plasmonic hot charge carriers activated Ni centres of metal-organic frameworks for the oxygen evolution reaction. <b>2019</b> , 7, 10601-10609	35
801	Photoelectrocatalytic oxidation of methane into methanol and formic acid over ZnO/graphene/polyaniline catalyst. <b>2019</b> , 28, 048101	9
800	Fe,N-doped graphene prepared by NH <sub>3</sub> plasma with a high performance for oxygen reduction reaction. <b>2019</b> , 337, 97-101	10
799	Nanoscale Perovskites as Catalysts and Supports for Direct Methanol Fuel Cells. <b>2019</b> , 25, 7779-7797	8
798	Ambient Fast Synthesis and Active Sites Deciphering of Hierarchical Foam-Like Trimetal-Organic Framework Nanostructures as a Platform for Highly Efficient Oxygen Evolution Electrocatalysis. <b>2019</b> , 31, e1901139	239
797	Hydrogel-Derived Honeycomb Ni S /N,P-C as an Efficient Oxygen Evolution Catalyst. <b>2019</b> , 25, 7561-7568	28
796	Engineering hierarchical CoSe/NiFe layered-double-hydroxide nanoarrays as high efficient bifunctional electrocatalyst for overall water splitting. <b>2019</b> , 425, 138-146	63
795	Defect engineering in earth-abundant electrocatalysts for CO <sub>2</sub> and N <sub>2</sub> reduction. <b>2019</b> , 12, 1730-1750	293
794	Electrochemically Fabricated NiW on a Cu Nanowire as a Highly Porous Non-Precious-Metal Cathode Catalyst for a Proton Exchange Membrane Water Electrolyzer. <b>2019</b> , 7, 8265-8273	20
793	Electrocatalysis at Organic-Metal Interfaces: Identification of Structure-Reactivity Relationships for CO Reduction at Modified Cu Surfaces. <b>2019</b> , 141, 7355-7364	76
792	Hydrogen Evolution and Oxidation: Mechanistic Studies and Material Advances. <b>2019</b> , 31, e1808066	201
791	Investigation of Cobalt Phthalocyanine at the Solid/Liquid Interface by Electrochemical Tip-Enhanced Raman Spectroscopy. <b>2019</b> , 123, 9852-9859	24
790	Facile synthesis of polyacrylonitrile-based N/S-codoped porous carbon as an efficient oxygen reduction electrocatalyst for zinc-air batteries. <b>2019</b> , 7, 11223-11233	25
789	Inlay of ultrafine Ru nanoparticles into a self-supported Ni(OH) <sub>2</sub> nanoarray for hydrogen evolution with low overpotential and enhanced kinetics. <b>2019</b> , 7, 11062-11068	43
788	Ternary metal sulfides for electrocatalytic energy conversion. <b>2019</b> , 7, 9386-9405	135
787	Heterogeneous catalysts for catalytic CO <sub>2</sub> conversion into value-added chemicals. <b>2019</b> , 1,	31
786	Zn <sub>0.35</sub> Co <sub>0.65</sub> O A Stable and Highly Active Oxygen Evolution Catalyst Formed by Zinc Leaching and Tetrahedral Coordinated Cobalt in Wurtzite Structure. <b>2019</b> , 9, 1900328	27

- 785 Abundant Ce Ions in Au-CeO Nanosheets to Enhance CO Electroreduction Performance. **2019**, 15, e1900289 25
- 784 Tuning Interfacial Structures for Better Catalysis of Water Electrolysis. **2019**, 25, 9799-9815 23
- 783 Environmentally-Friendly Exfoliate and Active Site Self-Assembly: Thin 2D/2D Heterostructure Amorphous Nickel-Iron Alloy on 2D Materials for Efficient Oxygen Evolution Reaction. **2019**, 15, e1805435 37
- 782 Boosting the oxygen evolution electrocatalysis of layered nickel hydroxidenitrate nanosheets by iron doping. **2019**, 44, 10627-10636 22
- 781 Synergistic Mn-Co catalyst outperforms Pt on high-rate oxygen reduction for alkaline polymer electrolyte fuel cells. **2019**, 10, 1506 128
- 780 Edge/Defect Sites in ECo Fe (OH) Nanoplates Responsible for Water Oxidation Activity. **2019**, 12, 2755-2762 3
- 779 Theory-guided materials design: two-dimensional MXenes in electro- and photocatalysis. **2019**, 4, 809-827 132
- 778 Phase-Transited Lysozyme-Driven Formation of Self-Supported CoO@C Nanomeshes for Overall Water Splitting. **2019**, 6, 1900272 50
- 777 Exposing Cu-Rich {110} Active Facets in PtCu nanostars for boosting electrochemical performance toward multiple liquid fuels electrooxidation. **2019**, 12, 1147-1153 17
- 776 Nanostructured Rhenium-Carbon Composites as Hydrogen-Evolving Catalysts Effective over the Entire pH Range. **2019**, 2, 2725-2733 12
- 775 A novel strategy to boost the oxygen evolution reaction activity of NiFe-LDHs with in situ synthesized 3D porous reduced graphene oxide matrix as both the substrate and electronic carrier. **2019**, 43, 6555-6562 18
- 774 Predicting two-dimensional pentagonal transition metal monophosphides for efficient electrocatalytic nitrogen reduction. **2019**, 7, 11444-11451 35
- 773 Dual-nitrogen-source engineered FeNx moieties as a booster for oxygen electroreduction. **2019**, 7, 11007-11015 42
- 772 Integrated Valorization of Desalination Brine through NaOH Recovery: Opportunities and Challenges. **2019**, 58, 6502-6511 10
- 771 Single-atom ruthenium based catalyst for enhanced hydrogen evolution. **2019**, 249, 91-97 96
- 770 Enhanced selectivity of carbonaceous products from electrochemical reduction of CO<sub>2</sub> in aqueous media. **2019**, 30, 214-221 24
- 769 Temporally-Resolved Ultrafast Hydrogen Adsorption and Evolution on Single Platinum Nanoparticles. **2019**, 91, 4023-4030 19
- 768 Rational Design of Nanoarray Architectures for Electrocatalytic Water Splitting. **2019**, 29, 1808367 186

767	Understanding the Reaction Chemistry during Charging in Aprotic Lithium-Oxygen Batteries: Existing Problems and Solutions. <b>2019</b> , 31, e1804587	156
766	Recommended Practices and Benchmark Activity for Hydrogen and Oxygen Electrocatalysis in Water Splitting and Fuel Cells. <b>2019</b> , 31, e1806296	465
765	Recent Advances in Carbon-Based Metal-Free Electrocatalysts. <b>2019</b> , 31, e1806403	133
764	Morphology-Controlled Metal Sulfides and Phosphides for Electrochemical Water Splitting. <b>2019</b> , 31, e1806682	304
763	Elaborately Modified BiVO Photoanodes for Solar Water Splitting. <b>2019</b> , 31, e1806938	187
762	Enhancing Electrocatalytic Water Splitting by Strain Engineering. <b>2019</b> , 31, e1807001	240
761	Nanoarchitectonics for Transition-Metal-Sulfide-Based Electrocatalysts for Water Splitting. <b>2019</b> , 31, e1807134	613
760	Self-Assembly of Colloidal Spheres toward Fabrication of Hierarchical and Periodic Nanostructures for Technological Applications. <b>2019</b> , 4, 1800541	43
759	Integrated Valorization of Desalination Brine through NaOH Recovery: Opportunities and Challenges. <b>2019</b> , 131, 6570-6579	6
758	Platinum Group Nanowires for Efficient Electrocatalysis. <b>2019</b> , 3, 1800545	34
757	Key Factors for Simultaneous Improvements of Performance and Durability of Core-Shell Pt Ni/Carbon Electrocatalysts Toward Superior Polymer Electrolyte Fuel Cell. <b>2019</b> , 19, 1337-1353	2
756	Bifunctional cobalt phosphide nanoparticles with convertible surface structure for efficient electrocatalytic water splitting in alkaline solution. <b>2019</b> , 371, 262-269	31
755	Acceleration of material R&D process through rational design. <b>2019</b> , 160, 397-402	0
754	Syngas production from electrocatalytic CO <sub>2</sub> reduction with high energetic efficiency and current density. <b>2019</b> , 7, 7675-7682	47
753	Recent Advances on Controlled Synthesis and Engineering of Hollow Alloyed Nanotubes for Electrocatalysis. <b>2019</b> , 31, e1803503	50
752	Chemical Approaches to Carbon-Based Metal-Free Catalysts. <b>2019</b> , 31, e1804863	53
751	Rechargeable Zn-CO Electrochemical Cells Mimicking Two-Step Photosynthesis. <b>2019</b> , 31, e1807807	45
750	CO <sub>2</sub> Electrochemical Reduction As Probed through Infrared Spectroscopy. <b>2019</b> , 4, 682-689	121

- 749 Cu(ii)-nanoparticle-derived structures under CO reduction conditions: a matter of shape. **2019**, 21, 5894-5897 4
- 748 Bimetal-Organic Framework-Derived Porous Rodlike Cobalt/Nickel Nitride for All-pH Value Electrochemical Hydrogen Evolution. **2019**, 11, 8018-8024 67
- 747 Controlled Assembly of Hierarchical Metal Catalysts with Enhanced Performances. **2019**, 5, 805-837 14
- 746 A Simple Method To Locate the Optimal Adsorption Energy for the Best Catalysts Directly. **2019**, 9, 2633-2638 16
- 745 Urchin-like ternary cobalt phosphosulfide as high-efficiency and stable bifunctional electrocatalyst for overall water splitting. **2019**, 371, 126-134 24
- 744 In situ structural evolution of a nickel boride catalyst: synergistic geometric and electronic optimization for the oxygen evolution reaction. **2019**, 7, 5288-5294 45
- 743 Polyacrylonitrile-derived nanostructured carbon materials. **2019**, 92, 89-134 50
- 742 Improved oxygen evolution activity of IrO by in situ engineering of an ultra-small Ir sphere shell utilizing a pulsed laser. **2019**, 11, 4407-4413 81
- 741 Recent Advances in the Development of Water Oxidation Electrocatalysts at Mild pH. **2019**, 15, e1805103 153
- 740 Surface chemical-functionalization of ultrathin two-dimensional nanomaterials for electrocatalysis. **2019**, 12, 250-268 32
- 739 Studying Electrocatalysts in Operando Conditions: Correlating TEM Imaging and X-Ray Spectroscopies. **2019**, 25, 37-38 1
- 738 Big to Small: Ultrafine Mo C Particles Derived from Giant Polyoxomolybdate Clusters for Hydrogen Evolution Reaction. **2019**, 15, e1900358 35
- 737 Triggering surface oxygen vacancies on atomic layered molybdenum dioxide for a low energy consumption path toward nitrogen fixation. **2019**, 59, 10-16 122
- 736 e occupancy as an effective descriptor for the catalytic activity of perovskite oxide-based peroxidase mimics. **2019**, 10, 704 112
- 735 Cobalt Complex of a Tetraamido Macrocyclic Ligand as a Precursor for Electrocatalytic Hydrogen Evolution. **2019**, 38, 1397-1406 7
- 734 Pd Nanocrystals with Continuously Tunable High-Index Facets as a Model Nanocatalyst. **2019**, 9, 3144-3152 41
- 733 Heteroatom-Doped Transition Metal Electrocatalysts for Hydrogen Evolution Reaction. **2019**, 4, 805-810 188
- 732 Transition-Metal-Doped RuIr Bifunctional Nanocrystals for Overall Water Splitting in Acidic Environments. **2019**, 31, e1900510 261

731	Ultra-small RuPx nanoparticles on graphene supported schiff-based networks for all pH hydrogen evolution. <b>2019</b> , 44, 5717-5724	6
730	Tungsten Carbide Hollow Microspheres with Robust and Stable Electrocatalytic Activity toward Hydrogen Evolution Reaction. <b>2019</b> , 4, 4185-4191	17
729	Towards an atomistic understanding of electrocatalytic partial hydrocarbon oxidation: propene on palladium. <b>2019</b> , 12, 1055-1067	20
728	Rhodium Phosphide: A New Type of Hydrogen Oxidation Reaction Catalyst with Non-Linear Correlated Catalytic Response to pH. <b>2019</b> , 6, 1990-1995	10
727	Amorphous Ni-Nb-Y Alloys as Hydrogen Evolution Electrocatalysts. <b>2019</b> , 10, 243-252	12
726	Highly Selective Active Chlorine Generation Electrocatalyzed by CoO Nanoparticles: Mechanistic Investigation through in Situ Electrokinetic and Spectroscopic Analyses. <b>2019</b> , 10, 1226-1233	15
725	1T-2H Crx-MoS2 Ultrathin Nanosheets for Durable and Enhanced Hydrogen Evolution Reaction. <b>2019</b> , 7, 7227-7232	14
724	Beyond the thermodynamic volcano picture in the nitrogen reduction reaction over transition-metal oxides: Implications for materials screening. <b>2022</b> , 43, 2871-2880	3
723	Dealloying fabrication of hierarchical porous Nickel/Iron foams for efficient oxygen evolution reaction. 10,	0
722	Electronic descriptors for vacancy formation and hydrogen solution in Be-rich intermetallics. <b>2022</b> , 241, 118428	0
721	Electro-oxidation of propylene by palladium functionalized titanium hollow fibre electrodes. <b>2022</b> , 416, 18-28	0
720	Active bimetallic FeNi sites built on 2D trimetallic complex spinel oxides for industrially oxygen evolution electrocatalyst. <b>2022</b> , 26, 101214	0
719	Electronic structural engineering of transition metal-based electrocatalysts for the hydrogen evolution reaction. <b>2022</b> , 104, 107882	3
718	A realistic take on MXenes for electrochemical reduction of carbon dioxide. <b>2022</b> , 130, 109461	0
717	Computational approaches for nanocluster science. <b>2023</b> , 313-343	0
716	The interior NiCo2S4 nanotube skeletons supported MoS2 nanosheet arrays as advanced electrocatalysts for hydrogen evolution reaction. <b>2023</b> , 932, 167678	0
715	Solar light harvesting nanomaterial (BaZrS3) for photocatalytic activity and OER reaction. <b>2023</b> , 172, 111056	0
714	Water splitting performance of metal and non-metal-doped transition metal oxide electrocatalysts. <b>2023</b> , 474, 214864	1

- 713 Designing nanoclusters for catalytic activation of small molecules: A theoretical endeavor. **2023**, 247-273 1
- 712 Anchoring the late first row transition metals with B12P12 nanocage to act as single atom catalysts toward oxygen evolution reaction (OER). **2023**, 153, 107164 2
- 711 Ultra-high-rate CO<sub>2</sub> reduction reactions to multicarbon products with a current density of 1.7 A/cm<sup>2</sup> in neutral electrolytes. 0
- 710 Hetero-structured NiMoO<sub>4</sub>/Ni<sub>3</sub>S<sub>4</sub>/MoS<sub>2</sub> pompons decorated nickel foam electrode for high-efficient urea and urine electrolysis. **2023**, 608, 155166 0
- 709 Interface engineering of Ni/NiO heterostructures with abundant catalytic active sites for enhanced methanol oxidation electrocatalysis. **2023**, 630, 570-579 1
- 708 Zinc and fluorine ions dual-modulated NiCoP nanoprism array electrocatalysts for efficient water splitting. **2023**, 630, 559-569 0
- 707 Grain boundary and lattice distortion enriched platinum-nickel/ceria colloidal nanoparticle clusters for highly efficient electrooxidation of liquid fuels. **2023**, 454, 140055 0
- 706 A hybrid electrocatalyst derived from Co-MOF by doping molybdenum for efficient hydrogen generation. **2023**, 545, 121244 0
- 705 Boosting the hydrogen evolution of layered double hydroxide by optimizing the electronic structure and accelerating the water dissociation kinetics. **2023**, 453, 139751 1
- 704 Engineering electron redistribution of bimetallic phosphates with CeO<sub>2</sub> enables high-performance overall water splitting. **2023**, 453, 139796 1
- 703 Intermetallic Pd<sub>3</sub>Pb nanobranches with low-coordinated surface atoms for highly efficient ethanol oxidation reaction. **2023**, 610, 155311 0
- 702 Modulating surface cation vacancies of nickel-cobalt oxides as efficient catalysts for lithium-oxygen batteries. **2023**, 139, 147-155 0
- 701 Stable p-block metals electronic perturbation in PtM@CNT (M=Ga, In, Pb and Bi) for acidic seawater hydrogen production at commercial current densities. **2023**, 322, 122100 0
- 700 Anion-exchange membrane water electrolyzers and fuel cells. 4
- 699 Synergistic Effect from Ru Nanoclusters on WC<sub>1-x</sub> Anchored on N-doped Carbon Nanosheet Boosting High-efficient Alkaline Hydrogen Evolution. 0
- 698 Atomically dispersed Pt inside MOFs for highly efficient photocatalytic hydrogen evolution. 0
- 697 Synthesis and phase-engineering of ultrathin two-dimensional nanomaterials. **2022**, 0
- 696 Biogenic synthesis of palladium nanoparticles: New production methods and applications. **2022**, 11, 3104-3124 0

695	Metal-Oxide Heterointerface Synergistic Effects of Copper-Zinc Systems for Highly Selective CO <sub>2</sub> -to-CH <sub>4</sub> Electrochemical Conversion.	0
694	Identifying the Morphology of Pt Nanoparticles for the Optimal Catalytic Activity towards CO Oxidation.	0
693	Multifunctional carbon-armored Ni electrocatalyst for hydrogen evolution under high current density in alkaline electrolyte solution. <b>2023</b> , 321, 122081	0
692	A dealloyed bulk FeNi pattern with exposed highly active facets for cost-effective oxygen evolution. <b>2023</b> , 323, 122171	1
691	Surface reconstruction and charge distribution enabling Ni/W <sub>5</sub> N <sub>4</sub> Mott-Schottky heterojunction bifunctional electrocatalyst for efficient urea-assisted water electrolysis at a large current density. <b>2023</b> , 323, 122168	0
690	Dual-metal-organic-framework derived CoP/MoP hybrid as an efficient electrocatalyst for acidic and alkaline hydrogen evolution reaction. <b>2023</b> , 631, 147-153	0
689	Electrocatalytic Performance of Bimetallic Ni-Mo Alloy with Thermally Modulated Microstructure for Hydrogen Generation at Ultra-Low Overpotential in Acidic Media. <b>2022</b> ,	0
688	Theoretical studies of non-noble metal single-atom catalyst Ni <sub>1</sub> /MoS <sub>2</sub> : Electronic structure and electrocatalytic CO <sub>2</sub> reduction.	1
687	Tailoring of Active Sites from Single to Dual Atom Sites for Highly Efficient Electrocatalysis.	0
686	An integrated platinum-nanocarbon electrocatalyst for efficient oxygen reduction. <b>2022</b> , 13,	5
685	Synergistic Effect of Diatomic Mo-B Site Confined in Graphene-Like C <sub>2</sub> N Enables Electrocatalytic Nitrogen Reduction via Novel Mechanism.	0
684	Improving the ORR Performance by Enhancing the Pt Oxidation Resistance. <b>2022</b> ,	0
683	Continuous Modulation of Electrocatalytic Oxygen Reduction Activities of Single-atom Catalysts through p <i>n</i> Junction Rectification.	5
682	Efficient Electrochemical Generation of Active Chlorine to Mediate Urea and Ammonia Oxidation in a Hierarchically Porous-Ru/RuO <sub>2</sub> -based Flow Reactor. <b>2022</b> , 130327	0
681	Fabrication of 3D ordered mesoporous nickel phosphide for efficient hydrogen evolution reaction. <b>2022</b> ,	0
680	Graphene at Liquid Copper Catalysts: Atomic-Scale Agreement of Experimental and First-Principles Adsorption Height. 2204684	0
679	NiFe Nanoparticle Encapsulated into Wood Carbon for Efficient Oxygen Evolution: Effect of Wood Delignification.	0
678	Tuning the d-Band States of Ni-Based Serpentine Materials via Fe <sup>3+</sup> Doping for Efficient Oxygen Evolution Reaction.	0

- 677 Nanoreactor Based on Cyclodextrin for Direct Electrocatalyzed Ammonia Synthesis. 0
- 676 Tafel Slope Analysis from Inherent Rate Constants for Oxygen Reduction Reaction Over N-doped Carbon and FeN-doped Carbon Electrocatalysts. 0
- 675 Identifying the geometric catalytic active sites of crystalline cobalt oxyhydroxides for oxygen evolution reaction. **2022**, 13, 0
- 674 Copper/Carbon Nanocomposites for Electrocatalytic Reduction of Oxygen to Hydrogen Peroxide. 0
- 673 Bicontinuous Nanoporous Metals with Self-Organized Functionalities. 0
- 672 Multifunctional catalytic activity of Cu<sub>3</sub>N (001) surface: A first-principles study. **2022**, 0
- 671 Constructing collaborative interface between Mo<sub>2</sub>N and NiS as efficient bifunctional electrocatalysts for overall water splitting. **2022**, 155656 0
- 670 Core-shell hollow nanostructures as highly efficient polysulfide conversion and adsorption cathode for shuttle-free lithium-sulfur batteries. **2022**, 140338 1
- 669 Activation of inert Ag by nanoplasmonic synergy for enhanced hydrogen evolution reaction. **2022**, 0
- 668 Modulation to favorable surface adsorption energy for oxygen evolution reaction intermediates over carbon-tunable alloys towards sustainable hydrogen production. 0
- 667 Interface Engineering of Hybrid ZnCo<sub>2</sub>O<sub>4</sub>@Ni<sub>2.5</sub>Mo<sub>6</sub>S<sub>6.7</sub> Structures for Flexible Energy Storage and Alkaline Water Splitting. **2022**, 140458 0
- 666 Engineering Amorphous/Crystalline Rod-like Core-shell Electrocatalysts for Overall Water Splitting. **2022**, 14, 50783-50793 0
- 665 Continuous Modulation of Electrocatalytic Oxygen Reduction Activities of Single-atom Catalysts through p<sub>n</sub> Junction Rectification. 1
- 664 TaIrTe<sub>4</sub> Monolayer with Topological Insulator Characteristic: A New and Highly Efficient Electrocatalyst toward Oxygen Reduction Reaction. 0
- 663 P-mediated Cu-N 4 sites in carbon nitride realizing CO<sub>2</sub> photoreduction to C<sub>2</sub>H<sub>4</sub> with selectivity modulation. 2208132 2
- 662 Challenges in Elucidating the Free Energy Scheme of the Laccase Catalyzed Reduction of Oxygen. 0
- 661 Surface Spin Enhanced High Stable NiCo<sub>2</sub>S<sub>4</sub> for Energy-Saving Production of H<sub>2</sub> from Water/Methanol Coelectrolysis at High Current Density. 2205257 0
- 660 Individually-atomic governing d<sub>π</sub> orbital interactions via Cu-promoted optimization of Fe-d band centers for high-efficiency zinc-air battery. 1



- 659 Facile Synthesis of Medium-Entropy Metal Sulfides as High-Efficiency Electrocatalysts toward Oxygen Evolution Reaction. 2208170 0
- 658 Progress of Heterogeneous Iridium-Based Water Oxidation Catalysts. 2
- 657 General Approach to Synthesize Multilayer Graphitic Carbon-Nanotube-Encapsulated NiCo Alloys as Trifunctional Electrocatalysts: Deciphering the Role of N-Dopants. 0
- 656 Dual-site collaboration boosts electrochemical nitrogen reduction on Ru-S-C single-atom catalyst. **2022**, 43, 3177-3186 0
- 655 Aerogels-Inspired based Photo and Electrocatalyst for Water Splitting to Produce Hydrogen. **2022**, 29, 101670 0
- 654 Theory-guided electrocatalyst engineering: From mechanism analysis to structural design. **2022**, 43, 2987-3018 0
- 653 Density functional theory study of active sites and reaction mechanism of ORR on Pt surfaces under anhydrous conditions. **2022**, 43, 3126-3133 0
- 652 First-principles study of TM supported SnSe<sub>2</sub> monolayer as an efficient electrocatalyst for NOER. **2022**, 533, 112789 0
- 651 Metal/semiconductor contact induced Mott-Schottky junction for enhancing the electrocatalytic activity of water-splitting catalysts. 0
- 650 An Ultrastable Rechargeable Zinc-Air Battery Using a Janus Superwetting Air Electrode. 0
- 649 Chemical modification of graphene for atomic-scale catalyst supports. 0
- 648 Unveiling Chemically Robust Bimetallic Squarate-Based Metal-Organic Frameworks for Electrocatalytic Oxygen Evolution Reaction. 2202964 0
- 647 Boosting large-current-density water oxidation activity and stability by phytic acid-assisted rapid electrochemical corrosion. **2022**, 0
- 646 Recent advances in understanding and design of efficient hydrogen evolution electrocatalysts for water splitting: A comprehensive review. **2022**, 102811 1
- 645 Electro-Synthesis of Organic Compounds with Heterogeneous Catalysis. 2205077 1
- 644 Tuning Mass Transport in Electrocatalysis Down to Sub-5nm Through Nanoscale Grade Separation. 4
- 643 Tuning the Coordination Microenvironment of Central Fe Active Site to Boost Water Electrolysis and Oxygen Reduction Activity. 2205111 0
- 642 Formation and Stabilization of NiOOH by Introducing  $\beta$ -FeOOH in LDH: Composite Electrocatalyst for Oxygen Evolution and Urea Oxidation Reactions. 2209338 2

- 641 Nitrogen-rich carbon nitride inducing electron delocalization of Co-N4 site to enhance electrocatalytic carbon dioxide reduction. **2022**, 122199 1
- 640 Tuning Mass Transport in Electrocatalysis Down to Sub-5nm Through Nanoscale Grade Separation. 0
- 639 Fe<sub>N</sub>/C catalysts with tunable mesoporous structures and carbon layer numbers reveal the role of interlayer O<sub>2</sub> activation. 0
- 638 Modulating Electronic Environment of Ru Nanoclusters via Local Charge Transfer for Accelerating Alkaline Water Electrolysis. 2204738 0
- 637 NiSe<sub>2</sub> Nanoparticles Supported on Halloysite Sheets as an Efficient Electrocatalyst toward Alkaline Oxygen Evolution Reaction. 1
- 636 Unveiling the reconstructed active phase of Ni<sub>3</sub>Se<sub>2</sub> model for water splitting. 1
- 635 Cu<sub>5</sub>FeS<sub>4</sub> quantum dots as single-component photo-assisted electrocatalyst for efficient hydrogen evolution. 1
- 634 Metal-doped nickel-based chalcogenides and phosphochalcogenides for electrochemical water splitting. 0
- 633 Electro-(Photo)catalysis for Concurrent Evolution of Hydrogen and High Value-Added Chemicals. 1, 0
- 632 Thermo-responsive palladiumruthenium nanozyme synergistic photodynamic therapy for metastatic breast cancer management. **2022**, 10, 10027-10041 0
- 631 The performance of CCSD(T) for the calculation of dipole moments in diatomics. 0
- 630 Electrocatalysis with quantum chemistry. **2022**, 268, 00007 0
- 629 Ni<sub>3</sub>S<sub>2</sub>/M<sub>x</sub>S<sub>y</sub>NiCo LDH (M = Cu, Fe, V, Ce, Bi) heterostructure nanosheet arrays on Ni foam as high-efficiency electrocatalyst boosting for electrocatalytic overall water splitting and urea splitting. 0
- 628 A nanoelectrode-based study of water splitting electrocatalysts. 0
- 627 Does the Oxygen Evolution Reaction follow the classical OH\*, O\*, OOH\* path on single atom catalysts?. **2023**, 417, 351-359 0
- 626 Electrochemical fabrication of mesoporous metal-alloy films. 0
- 625 Transformation mechanism of high-valence metal sites for the optimization of Co- and Ni-based OER catalysts in an alkaline environment: recent progress and perspectives. 1
- 624 How to use a rotating ring-disc electrode (RRDE) subtraction method to investigate the electrocatalytic oxygen reduction reaction?. 0

623	Metallene-related materials for electrocatalysis and energy conversion.	0
622	Recent progress on design and applications of transition metal chalcogenide-associated electrocatalysts for the overall water splitting. <b>2023</b> , 44, 7-49	0
621	How to dope the basal plane of 2H-MoS <sub>2</sub> to boost the hydrogen evolution reaction?. <b>2023</b> , 439, 141653	0
620	Curvature Effects on the Bifunctional Oxygen Catalytic Performance of Single Atom Metal-N-C.	0
619	Renewable electrons-driven bioinorganic nitrogen fixation: A superior route toward green ammonia?.	0
618	Exploring the underlying oxygen reduction reaction electrocatalytic activities of pyridinic-N and pyrrolic-N doped graphene quantum dots. <b>2023</b> , 535, 112880	1
617	In situ characterisation for nanoscale structure-performance studies in electrocatalysis.	0
616	Strain engineering of electrocatalysts for hydrogen evolution reaction.	0
615	Microalgae-derived single-atom oxygen reduction catalysts for zinc-air batteries. <b>2023</b> , 203, 827-834	0
614	Metallic active-site engineering: a bridge of covalent triazine framework and high-performance catalysts.	0
613	The role of ion solvation in lithium mediated nitrogen reduction.	3
612	Mass Production of Dealloyed Pt <sub>3</sub> Co/C Catalyst for Oxygen Reduction Catalysis in PEMFC.	0
611	Boosting Electrocatalytic Water Oxidation of NiFe Layered Double Hydroxide via the Synergy of 3d-4f Electron Interaction and Citrate Intercalation.	1
610	Mesoporous carbon-based materials and their applications as non-precious metal electrocatalysts in the oxygen reduction reaction. <b>2023</b> , 439, 141678	1
609	How machine learning can accelerate electrocatalysis discovery and optimization.	1
608	Topologic transition-induced abundant undercoordinated Fe active sites in NiFeOOH for superior oxygen evolution. <b>2023</b> , 106, 108044	0
607	Effects of electrolytes on the electrochemical reduction of CO <sub>2</sub> to C <sub>2</sub> H <sub>4</sub> : a mechanistic point of view.	0
606	When nitrogen reduction meets single-atom catalysts. <b>2023</b> , 132, 101044	0

- 605 Tuning the selectivity of Cu<sub>2</sub>O/ZnO catalyst for CO<sub>2</sub> electrochemical reduction. **2023**, 68, 102368 ○
- 604 A binary single atom Fe<sub>3</sub>C|Fe N C catalyst by an atomic fence evaporation strategy for high performance ORR/OER and flexible Zinc-air battery. **2023**, 454, 140512 ○
- 603 Aligned porous nickel electrodes fabricated via ice templating with submicron particles for hydrogen evolution in alkaline water electrolysis. **2023**, 556, 232441 ○
- 602 Machine learning utilized for the development of proton exchange membrane electrolyzers. **2023**, 556, 232389 ○
- 601 Selectivity of Mo N C sites for electrocatalytic N<sub>2</sub> reduction: A function of the single atom position on the surface and local carbon topologies. **2023**, 612, 155908 ○
- 600 Role of introduced Se element and induced anion vacancies in Mo(SSe)<sub>2-x</sub>/G van der Waals heterostructure for enhanced hydrogen evolution reaction. **2023**, 633, 155-165 ○
- 599 Tubular palladium-based catalysts enhancing direct ethanol electrooxidation. **2023**, 633, 932-947 ○
- 598 Facile synthesis of Co-Ni layered double hydroxides nanosheets wrapped on a prism-like metal-organic framework for efficient oxygen evolution reaction. **2023**, 634, 14-21 ○
- 597 Two-dimensional template-directed synthesis of one-dimensional kink-rich Pd<sub>3</sub>Pb nanowires for efficient oxygen reduction. **2023**, 634, 827-835 ○
- 596 Novel honeycomb-like metal organic frameworks as multifunction electrodes for nitrate degradation: A computational study. **2023**, 445, 130534 ○
- 595 Revisiting the origin of ORR and HER activities of N-doped Egraphdiyne from the perspective of edge effects. **2023**, 613, 156084 ○
- 594 Anion-tuning of cobalt-based chalcogenides for efficient oxygen evolution in weakly alkaline seawater. **2023**, 267, 118366 ○
- 593 Tailored nitrogen-defect induced by diels-alder reaction for enhanced electrochemical hydrogen evolution reaction. **2023**, 633, 754-763 ○
- 592 Reaction kinetics on facet-engineered bismuth tungstate photoanodes for water oxidation. **2023**, 613, 156081 ○
- 591 Constructing abundant phase interfaces of the sulfides/metal-organic frameworks p-p heterojunction array for efficient overall water splitting and urea electrolysis. **2023**, 634, 630-641 ○
- 590 Design and fabrication of bipolar plates for PEM water electrolyser. **2023**, 146, 19-41 ○
- 589 FeNi coordination polymer based highly efficient and durable bifunction oxygen electrocatalyst for rechargeable zinc-air battery. **2023**, 308, 122974 ○
- 588 Amorphous FeCoNiBO<sub>x</sub> nanosheets as highly active and durable electrocatalysts for oxygen evolution reaction in alkaline electrolyte. **2022**, 46, 22989-22993 ○

- 587 Heterogenous Cu@ZrO<sub>2</sub> nanofibers enable efficient electrocatalytic nitrate reduction to ammonia under ambient conditions. **2022**, 58, 13811-13814 0
- 586 2D Nanomaterial Supported Single-Metal Atoms for Heterogeneous Photo/Electrocatalysis. 2210837 0
- 585 Effect of the Synthetic Approach on the Formation and Magnetic Properties of Iron-Based Nanophase in Branched Polyester Polyol Matrix. **2022**, 23, 14764 0
- 584 Tailoring Antibonding-Orbital Occupancy State of Selenium in Se-Enriched ReSe 2+ x Cocatalyst for Exceptional H<sub>2</sub> Evolution of TiO<sub>2</sub> Photocatalyst. 2209994 1
- 583 An ensemble learning classifier to discover arsenene catalysts with implanted heteroatoms for hydrogen evolution reaction. **2022**, 0
- 582 Acid-stable antimonate based catalysts for the electrocatalytic oxygen evolution reaction. 0
- 581 Metal-Compound-Based Electrocatalysts for Hydrogen Peroxide Electrosynthesis and the Electro-Fenton Process. 196-212 1
- 580 A review on system and materials for aqueous flexible metal-air batteries. 0
- 579 Co-Doped Fe<sub>3</sub>S<sub>4</sub> Nanoflowers for Boosting Electrocatalytic Nitrogen Fixation to Ammonia under Mild Conditions. **2022**, 61, 20123-20132 0
- 578 Swinging Hydrogen Evolution to Nitrate Reduction Activity in Molybdenum Carbide by Ruthenium Doping. **2022**, 12, 15045-15055 1
- 577 Recent Advances and Future Perspectives of Metal-Based Electrocatalysts for Overall Electrochemical Water Splitting. 0
- 576 NiFe Layered Double Hydroxide Electrocatalyst Prepared via an Electrochemical Deposition Method for the Oxygen Evolution Reaction. **2022**, 12, 1470 0
- 575 A novel bimetallic RuFe nanocluster to enable highly efficient oxygen reduction in zinc-air batteries. **2022**, 0
- 574 The SURFCAT Summer School 2022: The Science of Sustainable Fuels and Chemicals. 236-240 0
- 573 Review on Magnetism in Catalysis: From Theory to PEMFC Applications of 3d Metal Pt-Based Alloys. **2022**, 23, 14768 0
- 572 Fullerenes and derivatives as electrocatalysts: Promises and challenges. **2022**, 0
- 571 Dilute Alloying to Implant Activation Centers in Nitride Electrocatalysts for Lithium-Sulfur Batteries. 2209233 0
- 570 Ultrathin NiPt Single-Atom Alloy for Synergistically Accelerating Alkaline Hydrogen Evolution. **2022**, 5, 15136-15145 1

- 569 Liquid-Metal-Assisted Synthesis of Single-Crystalline TiC Nanocubes with Exposed {100} Facets for Enhanced Electrocatalytic Activity in the Hydrogen Evolution Reaction. 2201076 ○
- 568 Ternary Synergism of Heterogeneous M<sub>1</sub>N<sub>4</sub>-C-M<sub>2</sub>N<sub>4</sub>-C-M<sub>3</sub>N<sub>4</sub> Single-Atom Sites to Manipulate the Electrocatalytic Pathway for Zn-Air Battery and Water Splitting. 2203150 ○
- 567 Advanced energy materials: Current trends and challenges in electro- and photo-catalysts for H<sub>2</sub>O splitting. **2022**, ○
- 566 Electrocatalytic Self-Assembled Nanoarchitectonics for Clean Energy Conversion Applications. ○
- 565 Superior HER Activity of rGO@AuNRs@SAC-Pt Promoted by Maximized Electronic Interaction and Plasmonic Hot Carriers. **2022**, 126, 20235-20242 ○
- 564 Tuning the Electronic Structure of CobaltRuthenium Phosphide Nanosheets for Efficient Overall Water Splitting. **2022**, 10, 15889-15897 ○
- 563 Water induced ultrathin Mo<sub>2</sub>C nanosheets with high-density grain boundaries for enhanced hydrogen evolution. **2022**, 13, 1 ○
- 562 Ni optimizes Ir reaction pathway through IrNi alloy synergistic effect to improve overall water splitting efficiency. **2022**, 1 ○
- 561 In-situ imaging of strain-induced enhancement of hydrogen evolution activity on the extruded MoO<sub>2</sub> sheets. ○
- 560 Self-Reconstruction of Single-Atom-Thick A Layers in Nanolaminated MAX Phases for Enhanced Oxygen Evolution. 2211530 1
- 559 Layered Double Hydroxide Templated Synthesis of Amorphous NiCoFeB as a Multifunctional Electrocatalyst for Overall Water Splitting and Rechargeable ZincAir Batteries. 2203002 ○
- 558 A self-healing electrocatalytic system via electrohydrodynamics induced evolution in liquid metal. **2022**, 13, ○
- 557 High-Performance Oxygen Evolution Reaction Electrocatalysts Discovered via High-Throughput Aerogel Synthesis. 601-611 ○
- 556 Contrasting Pr<sup>1+</sup>CaxMnO<sub>3</sub> OER Catalysts with Different Valences and Covalences. ○
- 555 Inhibitor-regulated corrosion strategy towards synthesizing cauliflower-like amorphous RuFe-hydroxides as advanced hydrogen evolution reaction catalysts. **2022**, ○
- 554 Ultrafine Core-Shell Nanostructured Iron Cobalt Ferrocyanide with Excellent Electrocatalytic Activity toward Overall Water Splitting. **2022**, 7, 1
- 553 Manipulating the Rectifying Contact between Ultrafine Ru Nanoclusters and N-Doped Carbon Nanofibers for High-Efficiency pH-Universal Electrocatalytic Hydrogen Evolution. 2206781 ○
- 552 First Principles Study of Double Boron Atoms Supported on Graphitic Carbon Nitride (g-C<sub>3</sub>N<sub>4</sub>) for Nitrogen Electroreduction. **2022**, 12, 1744 ○

551	Magnetolectric Coupling for Metal-Air Batteries. 2210127	0
550	High Dispersion Fe <sub>2</sub> O <sub>4</sub> nanoparticles synthesis and its Oxygen Reduction Reaction catalytic performance. <b>2022</b> , 7,	0
549	Research Progress on Graphite-Derived Materials for Electrocatalysis in Energy Conversion and Storage. <b>2022</b> , 27, 8644	1
548	Tunable CO <sub>2</sub> enrichment on functionalized Au surface for enhanced CO <sub>2</sub> electroreduction.	0
547	Electronic Optimization and Modification of Efficient Ir Clusters Embedded onto Ni-Mo-P for Electrocatalytic Oxygen Evolution Reaction.	0
546	Synchronous regulation of morphology and electronic structure of FeNi-P nanosheet arrays by Zn implantation for robust overall water splitting.	0
545	Unravelling the Complex LiOH-Based Cathode Chemistry in Lithium-Oxygen Batteries**.	0
544	Design of ammonia oxidation electrocatalysts for efficient direct ammonia fuel cells. <b>2022</b> , 100093	0
543	A Novel Electrode for Value-Generating Anode Reactions in Water Electrolyzers at Industrial Current Densities.	2
542	Bimetallic-Based Electrocatalysts for Oxygen Evolution Reaction. 2212160	1
541	Potential and support-dependent hydrogen evolution reaction activation energies on sulfur vacancies of MoS <sub>2</sub> from GC-DFT. <b>2022</b> ,	0
540	Long-Term Stability Challenges and Opportunities in Acidic Oxygen Evolution Electrocatalysis.	0
539	Interfacial Water Manipulation with Ionic Liquids for the Oxygen Reduction Reaction. 382-391	0
538	Iridium single atoms incorporated in Co <sub>3</sub> O <sub>4</sub> efficiently catalyze the oxygen evolution in acidic conditions. <b>2022</b> , 13,	1
537	Enhanced Stability and Narrowed D-Band Gap of Ce-Doped Co <sub>3</sub> O <sub>4</sub> for Rechargeable Aqueous Zn-Air Battery. 2212021	2
536	Tailoring Spin State of Perovskite Oxides by Fluorine Atom Doping for Efficient Oxygen Electrocatalysis. 2206367	0
535	Structure Engineering and Electronic Modulation of Transition Metal Interstitial Compounds for Electrocatalytic Water Splitting.	1
534	Enhanced Selectivity in the Electroproduction of H <sub>2</sub> O <sub>2</sub> via F/S Dual-Doping in Metal-Free Nanofibers. 2208533	0

- 533 Doped-nitrogen enhanced the performance of Nb<sub>2</sub>CTx on the electrocatalytic synthesis of H<sub>2</sub>O<sub>2</sub>. 0
- 532 Efficient electrocatalysts refined from metal-dimer-anchored PC6 monolayers for NO reduction to ammonia. **2022**, 0
- 531 Nanopore-rich NiFe LDH targets the formation of the high-valent nickel for enhanced oxygen evolution reaction. 0
- 530 Molecule-Enhanced Electrocatalysis of Sustainable Oxygen Evolution Using Organoselenium Functionalized Metal-Organic Nanosheets. 0
- 529 Plasmonic imaging of the layer-dependent electrocatalytic activity of two-dimensional catalysts. **2022**, 13, 0
- 528 Magnetic and Electrochemical Properties of  $\gamma$ -Fe<sub>4</sub>N Nanoparticles with Cuboidal and Rodlike Morphologies. 0
- 527 Regulating the Charge Densities of s-Block Calcium Single-Atom Site Catalysts for Efficient N<sub>2</sub> Activation and Reduction. **2022**, 141187 0
- 526 Unconventional phase synergistic with doping engineering over Ni electrocatalyst featuring regulated electronic state for accelerated urea oxidation. 0
- 525 A catalyst acceleration platform toward realizing the energy transition. **2022**, 5, 4179-4186 0
- 524 Organic Heterocyclic Strategy for Precisely Regulating Electronic State of Palladium Interface to Boost Alcohol Oxidation. 2210877 0
- 523 Identification of the Origin for Reconstructed Active Sites on Oxyhydroxide for Oxygen Evolution Reaction. 2209307 3
- 522 Recent Advances in Transition Metal Layered Double Hydroxide Based Materials as Efficient Electrocatalysts. **2022**, 1 1
- 521 Novel Ni<sub>3</sub>S<sub>4</sub>/NiS/NC composite with multiple heterojunctions synthesized through space-confined effect for high-performance supercapacitors. **2023**, 5, 015504 0
- 520 A Novel Electrode for Value-Generating Anode Reactions in Water Electrolyzers at Industrial Current Densities. 0
- 519 Thin Film-Based Electrocatalysts for Water-Splitting Applications. 53-76 0
- 518 Controlled Fabrication of RuOxSe<sub>y</sub> Composites for Enhanced Acidic Oxygen Evolution. 0
- 517 Pristine Metal-Organic Frameworks and their Composites for Renewable Hydrogen Energy Applications. 2203224 1
- 516 Engineering Active Iron Sites on Nanoporous Bimetal Phosphide/Nitride Heterostructure Array Enabling Robust Overall Water Splitting. 2209465 0



515	Nanogap-Resolved Adsorption-Coupled Electron Transfer by Scanning Electrochemical Microscopy: Implications for Electrocatalysis. <b>2022</b> , 94, 17956-17963	0
514	Detecting Common Explosive Molecules Using a Wavy Monolayer Arsenene: A Density Functional Theory Study. <b>2022</b> , 7,	0
513	Lattice and Surface Engineering of Ruthenium Nanostructures for Enhanced Hydrogen Oxidation Catalysis. 2210328	0
512	Porous single-crystalline molybdenum nitride enhances electroreduction of nitrogen to ammonia. 9,	0
511	Unravelling the Complex LiOH-Based Cathode Chemistry in Lithium-Oxygen Batteries**.	0
510	Combinatorial Screening of Bimetallic Electrocatalysts for Nitrogen Reduction to Ammonia Using a High-Throughput Gas Diffusion Electrode Cell Design. <b>2022</b> , 169, 124506	1
509	Functionalized 2D materials F-MoS <sub>2</sub> and F-g-C <sub>3</sub> N <sub>4</sub> with TiO <sub>2</sub> as Composite Electrocatalysts for Electrochemical Hydrogen Evolution. <b>2022</b> ,	0
508	Excellent catalytic performance toward the hydrogen evolution reaction in topological semimetals.	0
507	Development of Anion Exchange Membrane Water Electrolysis and the Associated Challenges: A Review.	1
506	Spin-State Regulation of Nickel Cobalt Spinel toward Enhancing the Electron Transfer Process of Oxygen Redox Reactions in Lithium-Oxygen Batteries.	0
505	Application of HTS in Green Hydrogen and Fuel Cells. <b>2023</b> , 13-54	0
504	Regulation of graphitized pore structure adjacent to atomic Fe N <sub>4</sub> sites with pyrolyzing rate for highly active oxygen reduction reaction electrocatalysts. <b>2022</b> , 156076	0
503	Altering oxygen binding by redox-inactive metal substitution to control catalytic activity: oxygen reduction on manganese oxide nanoparticles as a model system.	0
502	Intrinsic Mechanical Effects on the Activation of Carbon Catalysts.	0
501	Altering oxygen binding by redox-inactive metal substitution to control catalytic activity: oxygen reduction on manganese oxide nanoparticles as a model system.	0
500	A novel MOF-derived strategy to construct Cu-doped CeO <sub>2</sub> supported PdCu alloy electrocatalysts for hydrogen evolution reaction. <b>2022</b> ,	0
499	Long-Term Stability Challenges and Opportunities in Acidic Oxygen Evolution Electrocatalysis.	0
498	Electrodeposited Cobalt Nanosheets on Smooth Silver as a Bifunctional Catalyst for OER and ORR: In Situ Structural and Catalytic Characterization. <b>2022</b> , 14, 55458-55470	1

497	Tailoring the Sb <sub>2</sub> Se <sub>3</sub> /rGO Heterointerfaces for Modulation of Electrocatalytic Hydrogen Evolution Performances in Acidic Media.	0
496	Dynamic Coordination Structure Evolutions of Atomically Dispersed Metal Catalysts for Electrocatalytic Reactions. 2202050	0
495	Unveiling the dehydrogenation mechanism of 1,1,6,6-tetracyclohexylhexane: A first-principles study. <b>2022</b> ,	0
494	Achievements, Challenges, and Perspectives on Nitrogen Electrochemistry for Carbon-Neutral Energy Technologies.	0
493	Understanding Cation Effects on the Hydrogen Evolution Reaction. 657-665	0
492	Microenvironment Regulation of the Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> MXene Surface for Enhanced Electrochemical Nitrogen Reduction. <b>2022</b> , 14, 56344-56352	0
491	Achievements, Challenges, and Perspectives on Nitrogen Electrochemistry for Carbon-Neutral Energy Technologies.	1
490	ZrN <sub>6</sub> -Doped Graphene for Ammonia Synthesis: A Density Functional Theory Study.	0
489	High-Density NiMnFe Hydroxide Nanoparticle-Nanosheet Arrays for Industrial-Level Electrochemical Oxygen Evolution Reaction. <b>2022</b> , 7,	0
488	Mo modified Co <sub>3</sub> O <sub>4</sub> nanosheets array by a rapid quenching strategy for efficient oxygen evolution electrocatalysis. 9,	0
487	Skeletal Nanostructures Promoting Electrocatalytic Reactions with Three-Dimensional Frameworks. 355-374	0
486	High-Rate Alkaline Water Electrolysis at Industrially Relevant Conditions Enabled by Superaerophobic Electrode Assembly. 2206180	2
485	Can the CO <sub>2</sub> Reduction Reaction Be Improved on Cu: Selectivity and Intrinsic Activity of Functionalized Cu Surfaces. <b>2022</b> , 12, 15737-15749	1
484	Bio-inspired heterogeneous single-cluster catalyst Ni <sub>100</sub> -Fe <sub>4</sub> S <sub>4</sub> for enhanced electrochemical CO <sub>2</sub> reduction to CH <sub>4</sub> .	0
483	Solar-to-hydrogen efficiency of more than 19% in photocatalytic water splitting. <b>2023</b> , 613, 66-70	6
482	In situ electrochemical Raman spectroscopy and ab initio molecular dynamics study of interfacial water on a single-crystal surface.	0
481	Electrocatalytic oxidation of 5-hydroxymethylfurfural for sustainable 2,5-furandicarboxylic acid production: From mechanism to catalysts design.	0
480	Controlled fabrication of Ru@Be composites for enhanced acidic oxygen evolution. <b>2023</b> , 6,	0

- 479 Cathode Materials for Secondary Zinc-Air Batteries. **2023**, 67-156 ○
- 478 Hydrogen Spillover-Promoted Hydrogen Evolution onto Copper. ○
- 477 Monodispersed ultrathin twisty PdBi alloys nanowires assemblies with tensile strain enhance C2+ alcohols electrooxidation. **2023**, ○
- 476 Deciphering Electrolyte Selection for Electrochemical Reduction of Carbon Dioxide and Nitrogen to High-Value-Added Chemicals. 2212483 1
- 475 Regulating Spin States in Oxygen Electrocatalysis. ○
- 474 Electronic Structure-Dependent Water-Dissociation Pathways of Ruthenium-Based Catalysts in Alkaline H<sub>2</sub>-Evolution. 2206949 1
- 473 Elucidating Electrocatalytic Oxygen Reduction Kinetics via Intermediates by Time-Dependent Electrochemiluminescence. ○
- 472 Construction of Hierarchical PdAgAu Nanorings/MXene<sub>2</sub>O Electrocatalysts for Efficient and Ultrastable Hydrogen Evolution Reaction. 2200194 ○
- 471 Cation-Coordinated Inner-Sphere CO<sub>2</sub> Electroreduction at Au<sub>2</sub>Water Interfaces. ○
- 470 N-Doped Carbon-Coupled Nickel Nitride Species/Ni<sub>2</sub>P Heterostructure for Enhancing Electrochemical Overall Water Splitting Performance. **2023**, 141868 ○
- 469 Microcantilever-Based In Situ Temperature-Programmed Desorption (TPD) Technique. 567-575 ○
- 468 Machine Learning Based Approach for Solving Atomic Structures of Nanomaterials Combining Pair Distribution Functions with Density Functional Theory. 2208220 ○
- 467 Mechanism Exploration and Catalyst Design for Hydrogen Evolution Reaction Accelerated by Density Functional Theory Simulations. **2023**, 11, 467-481 ○
- 466 Electrocatalysis Mechanism and Structure-Activity Relationship of Atomically Dispersed Metal-Nitrogen-Carbon Catalysts for Electrocatalytic Reactions. 2201524 ○
- 465 Pd-based Metallic Glasses as Promising Materials for Hydrogen Energy Applications. ○
- 464 Etching-Induced Surface Reconstruction of NiMoO<sub>4</sub> for Oxygen Evolution Reaction. **2023**, 15, 1
- 463 N-doped Carbon Nanotubes with High Amount of Graphitic Nitrogen as an Excellent Electrocatalyst for Water Splitting in Alkaline Solution. **2023**, 117160 ○
- 462 Overview of Zinc-Air Battery. **2023**, 1-21 ○

- 461 Modulation of Structural, Electronic, and Optical Properties of Titanium Nitride Thin Films by Regulated In Situ Oxidation. ○
- 460 Efficient  $\text{MoCo(OH)}_2/\text{Co}_3\text{O}_4/\text{Ni}$  foam electrocatalyst for overall water splitting. **2023**, 123837 ○
- 459 Ordered mesoporous carbon fiber bundles with high-density and accessible Fe-NX active sites as efficient ORR catalysts for Zn-air batteries. **2023**, 108142 ○
- 458 Sulfur Mismatch Substitution in Layered Double Hydroxides as Efficient Oxygen Electrocatalysts for Flexible Zinc-Air Batteries. 2212233 ○
- 457 Review and Perspective on Transition Metal Electrocatalysts Toward Carbon-Neutral Energy. ○
- 456 Manganese- and Selenium-codoping  $\text{CeO}_2@\text{Co}_3\text{O}_4$  Porous Core-shell Nanospheres for Enhanced Oxygen Evolution Reaction. ○
- 455 Hydrogen evolution boosted by moderate  $\text{Co}_3\text{ZnC}$  with current densities beyond  $1000 \text{ mA cm}^{-2}$ . ○
- 454 Single Cobalt Atoms Immobilized on Palladium-Based Nanosheets as 2D Single-Atom Alloy for Efficient Hydrogen Evolution Reaction. 2207651 ○
- 453 Heteroatom Doped Amorphous/Crystalline Ruthenium Oxide Nanocages as a Remarkable Bifunctional Electrocatalyst for Overall Water Splitting. 2207235 ○
- 452 Elucidating Electrocatalytic Oxygen Reduction Kinetics via Intermediates by Time-Dependent Electrochemiluminescence. ○
- 451 Rational Design of  $\text{Mo}_2\text{C}$  Nanosheets Anchored on Hierarchically Porous Carbon for Boosting Electrocatalytic  $\text{N}_2$  Reduction to  $\text{NH}_3$ . **2023**, 101240 ○
- 450 Hierarchical  $\text{Ni}_2\text{P}/\text{ZnNiP}$  nanosheet array for efficient energy-saving hydrogen evolution and hydrazine oxidation. ○
- 449 Post Cobalt Doping and Defect Engineering of  $\text{NbSSe}$  for Efficient Hydrogen Evolution Reaction. ○
- 448 3D printing of single-atom catalysts. ○
- 447 Electronic optimization and modification of efficient Ir clusters embedded onto  $\text{NiMoP}$  for electrocatalytic oxygen evolution reaction. **2023**, 6, ○
- 446 Strong precious metal-metal oxide interaction for oxygen reduction reaction: A strategy for efficient catalyst design. ○
- 445 High Durability of Fe-N-C Single Atom Catalysts with Carbon Vacancies Towards Oxygen Reduction Reaction in Alkaline Media. 2210714 2
- 444 Filling the Gap between Heteroatom Doping and Edge Enrichment of 2D Electrocatalysts for Enhanced Hydrogen Evolution. ○

- 443 DFT-based Machine Learning for Ensemble Effect of Pd@Au Electrocatalysts on CO<sub>2</sub> Reduction Reaction. ○
- 442 Thermodynamic and kinetic considerations of nitrogen carriers for chemical looping ammonia synthesis. **2023**, 3, ○
- 441 Catalytic Activity of Defect-Engineered Transition Metal Dichalcogenides Mapped with Atomic-Scale Precision by Electrochemical Scanning Tunneling Microscopy. 972-980 ○
- 440 Ternary PtCoMo Alloy with Dual Surface Co and Mo Defects for Synergistically Enhanced Acidic Oxygen Reduction. ○
- 439 Regulating Spin States in Oxygen Electrocatalysis. ○
- 438 Surface Site-Specific Replacement for Catalysis Selectivity Switching. ○
- 437 Defect Engineering in Carbon Materials for Electrochemical Energy Storage and Catalytic Conversion. ○
- 436 Carbon-Based Electrocatalysts for Acidic Oxygen Reduction Reaction. ○
- 435 Activating Ru<sup>2+</sup>/Co Interaction on the α-Co(OH)<sub>2</sub>@Ru Interface for Accelerating the Volmer Step of Alkaline Hydrogen Evolution. 2201362 ○
- 434 In Situ Spectroscopic Identification of the Electron-Transfer Intermediates of Photoelectrochemical Proton-Coupled Electron Transfer of Water Oxidation on Au. 1
- 433 Urchin-Like Structured MoO<sub>2</sub>/Mo<sub>3</sub>P<sub>2</sub>C Triple-Interface Heterojunction Encapsulated within Nitrogen-Doped Carbon for Enhanced Hydrogen Evolution Reaction. 2206472 ○
- 432 Controlled synthesis of WCo<sub>3</sub>S<sub>4</sub>@Co<sub>3</sub>O<sub>4</sub> as an environmentally friendly and low cost electrocatalyst for overall water splitting. **2023**, ○
- 431 Chemical Kinetics of Serial Processes for Photogenerated Charges at Semiconductor Surface: A Classical Theoretical Calculation. ○
- 430 Metal-oxo Cluster Mediated Atomic Rh with High Accessibility for Efficient Hydrogen Evolution. 2207527 ○
- 429 The adjacent Fe oxidation greatly enhancing OER activity on the Ni active site: S plays the role in optimizing local coordination and electronic structure. **2023**, 27, 101330 ○
- 428 The surface charge induced high activity of oxygen reduction reaction on the PdTe<sub>2</sub> bilayer. ○
- 427 Synthesis of Co<sub>4</sub>S<sub>3</sub>/Co<sub>9</sub>S<sub>8</sub> nanosheets and their Fe/Cr dual heteroatom co-doped components for the promoted OER properties. ○
- 426 Synthetic porous carbons for clean energy storage and conversion. **2023**, 100099 ○

- 425 Transition Metal Phosphide Nanoarchitectonics for Versatile Organic Catalysis. 2207053 0
- 424 In situ Insight into the low-temperature promotion of ZIF-67 in electrocatalytic oxygen evolution reaction. **2023**, 111637 1
- 423 PtFeCoNiCu high-entropy solid solution alloy as highly efficient electrocatalyst for the oxygen reduction reaction. **2023**, 26, 105890 0
- 422 An iron-base oxygen-evolution electrode for high-temperature electrolyzers. **2023**, 14, 0
- 421 Self-Growing MZIF8/GDE Bonding by  $\text{Ni}^{\text{II}}$  Boosts Electrochemical Oxygen Reduction to  $\text{H}_2\text{O}_2$ . 0
- 420 Engineering Multilevel Collaborative Catalytic Interfaces with Multifunctional Iron Sites Enabling High-Performance Real Seawater Splitting. 0
- 419 Epitaxial interface stabilizing iridium dioxide toward the oxygen evolution reaction under high working potentials. 0
- 418 Carbon-Based Electrocatalysts for Acidic Oxygen Reduction Reaction. 0
- 417 The Screening of Homo- and Hetero-Dual Atoms Anchored Graphdiyne for Boosting Electrochemical  $\text{CO}_2$  Reduction. 2201904 0
- 416 Long-term durability test of highly efficient membrane electrode assemblies for anion exchange membrane seawater electrolyzers. **2023**, 558, 232564 0
- 415 Biphenylene with doping B/N as promising metal-free single-atom catalysts for electrochemical oxygen reduction reaction. **2023**, 558, 232613 0
- 414 A review of nickel-molybdenum based hydrogen evolution electrocatalysts from theory to experiment. **2023**, 651, 119013 2
- 413 Pd<sub>3</sub>Pb<sub>1</sub>@Pt<sub>2</sub> core-shell concave nanocubes to boost the ethanol oxidation reaction. **2023**, 442, 141866 0
- 412 Cobalt single atom anchored on N-doped carbon nanoboxes as typical single-atom catalysts (SACs) for boosting the overall water splitting. **2023**, 458, 141435 0
- 411 Alkaline hydrogen oxidation reaction on Ni-based electrocatalysts: From mechanistic study to material development. **2023**, 478, 214980 0
- 410 Prussian blue analogues-derived Ni-doped CoFe<sub>2</sub>O<sub>4</sub> hollow nanocubes as electrocatalysts for oxygen evolution reaction. **2023**, 614, 156237 0
- 409 Dynamically-evolved surface heterojunction in iridium nanocrystals boosting acidic oxygen evolution and overall water splitting. **2023**, 78, 374-380 0
- 408 Tailoring zeolite ERI aperture for efficient separation of  $\text{CO}_2$  from gas mixtures. **2023**, 309, 123078 1

407	Agarose-gel-based self-limiting synthesis of a bimetal (Fe and Co)-doped composite as a bifunctional catalyst for a zinc-air battery. <b>2023</b> , 635, 186-196	0
406	Ultrafast synthesis of cobalt/carbon nanocomposites by magnetic induction heating for oxygen evolution reaction. <b>2023</b> , 2, 100046	0
405	MnCo <sub>2</sub> O <sub>4</sub> decorating porous PbO <sub>2</sub> composite with enhanced activity and durability for acidic water oxidation. <b>2023</b> , 338, 127344	0
404	LSTN (La <sub>0.4</sub> Sr <sub>0.4</sub> Ti <sub>0.9</sub> Ni <sub>0.1</sub> O <sub>3-<math>\delta</math></sub> ) perovskite and graphitic carbon nitride (g-C <sub>3</sub> N <sub>4</sub> ) hybrids as a bifunctional electrocatalyst for water-splitting applications. <b>2023</b> , 939, 168668	0
403	Ir-IrO <sub>2</sub> with heterogeneous interfaces and oxygen vacancies-rich surfaces for highly efficient oxygen evolution reaction. <b>2023</b> , 615, 156333	1
402	Theoretical screening and investigation on electrocatalytic nitrogen fixation of single transition metal atom supported by monolayer SnS <sub>2</sub> . <b>2023</b> , 615, 156362	1
401	Cobalt nanoparticles-encapsulated holey nitrogen-doped carbon nanotubes for stable and efficient oxygen reduction and evolution reactions in rechargeable Zn-air batteries. <b>2023</b> , 325, 122386	0
400	Boosting ethanol oxidation by NiOOH-CuO nano-heterostructure for energy-saving hydrogen production and biomass upgrading. <b>2023</b> , 325, 122388	9
399	Rational design of robust iridium-ceria oxide-carbon nanofibers to boost oxygen evolution reaction in both alkaline and acidic media.	0
398	Construction of CoP <sub>2</sub> -Mo <sub>4</sub> P <sub>3</sub> /NF Heterogeneous Interfacial Electrocatalyst for Boosting Water Splitting. <b>2023</b> , 13, 74	0
397	Highly Active, Long-lived Oxygen Evolution Electrocatalyst Derived from Open-framework Iridates. 2208539	0
396	Tuning OER Electrocatalysts toward LOM Pathway through the Lens of Multi-Descriptor Feature Selection by Artificial Intelligence-Based Approach. 299-320	0
395	Rational design of catalysts with earth-abundant elements.	0
394	Triple Interface Optimization of Ru-based Electrocatalyst with Enhanced Activity and Stability for Hydrogen Evolution Reaction. 2212514	0
393	Electrocatalytic performance of copper selenide as structural phase dependent for hydrogen evolution reaction. <b>2023</b> ,	0
392	Controllable synthesis of MOFs-derived porous and tubular bimetallic Fe <sub>2</sub> Ni phosphides for efficient electrocatalytic water splitting.	0
391	PEDOT: PSS/AuNPs-Based Composite as Voltammetric Sensor for the Detection of Pirimicarb. <b>2023</b> , 15, 739	0
390	Advanced Electrocatalytic System for Enhanced Atom/electron Utilizations.	0

- 389 First principles insights into the relative stability, electronic and catalytic properties of core-shell, Janus and mixed structural patterns for bimetallic Pd<sub>x</sub> nano-alloys (X = Co, Ni, Cu, Rh, Ag, Ir, Pt, Au). **2023**, 25, 4667-4679 0
- 388 Recent Progress of Non-Pt Catalysts for Oxygen Reduction Reaction in Fuel Cells. **2023**, 11, 361 0
- 387 Lattice Oxygen Activation for Enhanced Electrochemical Oxygen Evolution. **2023**, 127, 2147-2159 0
- 386 Dielectric Properties of Nanoconfined Water from Ab Initio Thermopotential Molecular Dynamics. 0
- 385 Structure effects of Pt<sub>15</sub> clusters for the oxygen reduction reaction: first-principles calculations. **2023**, 25, 4764-4772 0
- 384 Electron Transfer in Heterojunction Catalysts. 0
- 383 Recent Developments of MXene-based Catalysts for Hydrogen Production by Water Splitting. 0
- 382 New high-performance QAIM algorithms: From organic photovoltaics to catalyst materials. **2023**, 37-51 0
- 381 A comprehensive review on the electrochemical parameters and recent material development of electrochemical water splitting electrocatalysts. **2023**, 13, 3843-3876 0
- 380 Bifunctional Nanostructured Palladium/MoS<sub>x</sub> Electrocatalyst for Cathode Hydrogen Evolution Reaction PEM Water Electrolysis and Oxygen Reduction Reaction. 2200518 0
- 379 Direct Detection of Fe VI Water Oxidation Intermediates in an Aqueous Solution. 0
- 378 Nest-Type ZNC/PtZn/C as a Highly Efficient Catalyst for Methanol Electro-Oxidation. 0
- 377 A General Strategy to Remove Metal Aggregates toward Metal-Nitrogen-Carbon Catalysts with Exclusive Atomic Dispersion. 2211398 0
- 376 Design strategies of Pt-based electrocatalysts and tolerance strategies in fuel cells: a review. **2023**, 13, 4803-4822 1
- 375 2D Metal-Organic Frameworks as Competent Electrocatalysts for Water Splitting. 2207342 1
- 374 Recent Progress in Metal Phosphorous Chalcogenides: Potential High-Performance Electrocatalysts. 2207249 2
- 373 Tracking the Role of Defect Types in Co<sub>3</sub>O<sub>4</sub> Structural Evolution and Active Motifs during Oxygen Evolution Reaction. **2023**, 145, 2271-2281 3
- 372 FeCoN Co-doped Hollow Carbon Nanocage Grafted with Carbon Nanotubes as an Electrocatalyst for Enhanced Oxygen Reduction Reaction. 0



- 371 Enhancing the d/p-Band Center Proximity with Amorphous-Crystalline Interface Coupling for Boosted pH-Robust Water Electrolysis. 2203797 2
- 370 Selective oxidation of biomass-derived carbohydrate monomers. 0
- 369 Amorphous Metal-Organic Framework-Derived Electrocatalyst to Boost Water Oxidation. **2023**, 14, 1156-1164 0
- 368 The lattice strain dominated catalytic activity in single-metal nanosheets. 0
- 367 Pd-based Nanocatalysts for Oxygen Reduction Reaction: Preparation, Performance, and in-Situ Characterization. **2023**, 100021 0
- 366 Spatial confinement of silver nanoparticles in nitrogen-doped carbon framework with high catalytic activity and long-term cycling. 10, 0
- 365 Sustainable upcycling of post-consumer waste to metal-graphene catalysts for green chemicals and clean water. **2023**, 101256 0
- 364 Interfacial Chemical Bond Modulation of  $\text{Co}_3(\text{PO}_4)_2\text{-MoO}_3$  Heterostructures for Alkaline Water/Seawater Splitting. 0
- 363 Heterostructured nanocatalysts to boost the hydrogen evolution reaction in neutral electrolyte. **2023**, 100499 0
- 362 First-principles screening of transition metal doped anatase  $\text{TiO}_2(101)$  surfaces for the electrocatalytic nitrogen reduction. 0
- 361 Ultrafine Core@Shell  $\text{Cu}_1\text{Au}_1\text{@Cu}_1\text{Pd}_3$  Nanodots Synergized with 3D Porous N-Doped Graphene Nanosheets as a High-Performance Multifunctional Electrocatalyst. 0
- 360 Long-Range Electrification of an Air/Electrolyte Interface and Probing Potential of Zero Charge by Conductive Amplitude-Modulated Atomic Force Microscopy. **2023**, 95, 2901-2908 0
- 359 (Fe, F) co-doped nickel oxyhydroxide for highly efficient oxygen evolution reaction. 0
- 358 Hydroxylation-Inducing the Coupled Dual-Centers in Highly Amorphized  $\text{Ni}_{0.76}\text{Mo}_{1.24}/\text{Mo}_2\text{N}$  Nanoarrays with Superior Alkaline Hydrogen Evolution. 0
- 357 Synthesis of Metal Organic Frameworks (MOFs) and Their Derived Materials for Energy Storage Applications. **2023**, 5, 140-166 0
- 356 Iridium-Based Electrocatalysts for Acidic Oxygen Evolution Reaction: Engineering Strategies to Enhance the Activity and Stability. 0
- 355 Direct electrochemical identification of rare microscopic catalytic active sites. 0
- 354 Thoughts about Choosing a Proper Counter Electrode. 2534-2541 0

- 353 From surface loading to precise confinement of polyoxometalates for electrochemical energy storage. **2023**, 108194 ○
- 352 Complementary Design in Multicomponent Electrocatalysts for Electrochemical Nitrogen Reduction: Beyond the Leverage in Activity and Selectivity. ○
- 351 Correlating the Experimentally Determined CO Adsorption Enthalpy with the Electrochemical CO Reduction Performance on Cu Surfaces. ○
- 350 Ni<sub>3</sub>S<sub>2</sub>/Co<sub>9</sub>S<sub>8</sub> embedded poor crystallinity NiCo layered double hydroxides hierarchical nanostructures for efficient overall water splitting. **2023**, 637, 85-93 ○
- 349 High-entropy alloys in water electrolysis: Recent advances, fundamentals, and challenges. ○
- 348 Surface-functionalized three-dimensional MXene supports to boost the hydrogen evolution activity of Pt catalysts in alkaline media. **2023**, 11, 5328-5336 ○
- 347 Rational nitrogen alloying in nickel-molybdenum nitride can mediate efficient and durable alkaline hydrogen evolution. **2023**, 11, 7256-7263 ○
- 346 Dynamically Activating Ni-Based Catalysts by Self-Anchored Mononuclear Fe for Efficient Water Oxidation. ○
- 345 Deeper mechanistic insights into epitaxial nickelate electrocatalysts for the oxygen evolution reaction. **2023**, 59, 4562-4577 ○
- 344 A general but still unknown characteristic of active oxygen evolution electrocatalysts. **2023**, 14, 3622-3629 ○
- 343 Role of cobalt phthalocyanine on the formation of high-valent cobalt species revealed by in situ Raman spectroscopy. **2023**, 11, 8141-8149 ○
- 342 Pore confined time-of-flight secondary ion electrochemical mass spectrometry. ○
- 341 Development and perspective of multi-site electrocatalysts for neutral hydrogen evolution. ○
- 340 Unfolding the band structure of van der Waals heterostructures. **2023**, 7, ○
- 339 Surface-Dependent Hydrogen Evolution Activity of Copper Foil. **2023**, 16, 1777 ○
- 338 Strain Engineering of Face-Centered Cubic Pd/Bi Nanosheets Boosts Electrocatalytic Ethanol Oxidation. **2023**, 6, 2471-2478 ○
- 337 Divalent Oxidation State Ni as an Active Intermediate in Prussian Blue Analogues for Electrocatalytic Urea Oxidation. **2023**, 62, 3637-3645 ○
- 336 N-, Se-, and S-Doped Bimetallic NiCoP Nanosheet Arrays as Efficient Hydrogen Evolution Electrocatalysts. **2023**, 11, 4980-4989 ○

- 335 Oxidation State Engineering in Octahedral Ni by Anchored Sulfate to Boost Intrinsic Oxygen Evolution Activity. **2023**, 17, 6770-6780 ○
- 334 Singlet Oxygen Induced Site-Specific Etching Boosts Nitrogen-Carbon Sites for High-Efficiency Oxygen Reduction. ○
- 333 Adsorbate Bond Number Dependency for  $\sigma$  and  $\pi$  Bonds in Linear Scaling Relationships. **2023**, 127, 5416-5424 ○
- 332 Self-Adaptive Electronic Structure of Amphoteric Conjugated Ligand-Modified 3d Metal-3N4 Smart Electrocatalyst by pH Self-Response Realizing Electrocatalytic Self-Adjustment. ○
- 331 Self-supported electrodes to enhance mass transfer for high-performance anion exchange membrane water electrolyzer. **2023**, 460, 141727 ○
- 330 High-Entropy Nanomaterials for Advanced Electrocatalysis. ○
- 329 Active and durable  $R_2MnRuO_7$  pyrochlores with low Ru content for acidic oxygen evolution. **2023**, 14, ○
- 328 Increasing Accessible Active Site Density of Non-Precious Metal Oxygen Reduction Reaction Catalysts through Ionic Liquid Modification. ○
- 327 MXene-based single atom catalysts for efficient  $CO_2RR$  towards CO: A novel strategy for high-throughput catalyst design and screening. **2023**, 461, 141936 ○
- 326 Recent developments on iron and nickel-based transition metal nitrides for overall water splitting: A critical review. **2023**, 480, 215029 1
- 325 Advanced in-situ electrochemical scanning probe microscopies in electrocatalysis. **2023**, 47, 93-120 ○
- 324 Three-Dimensional Cadmium-Organic Framework with Dual Functions of Oxygen Evolution in Water Splitting and Fenton-like Photocatalytic Removal of Organic Pollutants. ○
- 323 Syntheses and applications of single-atom catalysts for electrochemical energy conversion reactions. **2023**, 47, 32-66 ○
- 322 The Facet Dependence of  $CO_2$  Electroreduction Selectivity on a  $Pd_3Au$  Bimetallic Catalyst: A DFT Study. **2023**, 28, 3169 ○
- 321 Restructuring and Activation of Cu(111) under Electrocatalytic Reduction Conditions. ○
- 320 Restructuring and Activation of Cu(111) under Electrocatalytic Reduction Conditions. ○
- 319 Heterostructured Mn-doped  $NiS_x/NiO/Ni_3N$  nanoplate arrays as bifunctional electrocatalysts for energy-saving hydrogen production and urea degradation. **2023**, 619, 156789 ○
- 318 Nano-sized double perovskite oxide as bifunctional oxygen electrocatalysts. **2023**, 18, 100103 ○

- 317 Transfer learning aided high-throughput computational design of oxygen evolution reaction catalysts in acid conditions. **2023**, 80, 744-757 ○
- 316 Reconstructed Cu/Cu<sub>2</sub>O(l) catalyst for selective electroreduction of CO<sub>2</sub> to C<sub>2</sub>+ products. **2023**, 150, 107474 ○
- 315 MOF-derived N-doped carbon nanosticks coupled with Fe phthalocyanines for efficient oxygen reduction. **2023**, 464, 142668 ○
- 314 Catalytic upcycling of waste polypropylene for gram-scale production of FeCo@N-doped carbon nanotubes toward efficient oxygen reduction electrocatalysis. **2023**, 936, 117394 ○
- 313 Mo, V and M (M=Mn, Fe, Co, Cu) Co-modulated Ni oxides in-situ derived from nickel foam as efficient electrocatalysts for alkaline hydrogen evolution and oxygen evolution. **2023**, 542, 113132 ○
- 312 Electrochemical reduction of CO<sub>2</sub> via a CuO/SnO<sub>2</sub> heterojunction catalyst. **2023**, 818, 140438 ○
- 311 Self-supported N-doped hierarchical Co<sub>3</sub>O<sub>4</sub> electrocatalyst with abundant oxygen vacancies for acidic water oxidation. **2023**, 465, 142745 ○
- 310 Hetero-interfacial nickel nitride/vanadium oxynitride porous nanosheets as trifunctional electrodes for HER, OER and sodium ion batteries. **2023**, 81, 71-81 ○
- 309 Synthesis of large-size bulk hierarchically graphene-structured porous carbon and its versatile applications as hosts of sulfur and lithium for Li-S full cells and electrocatalyst for water splitting. **2023**, 947, 169587 ○
- 308 Composition-tunable PtNiCu nanoparticles for boosting methanol oxidation reaction. **2023**, 946, 169354 ○
- 307 Nitrogen-doped carbon as selectively permeable layer to enhance the anti-poisoning ability of hydrogen oxidation reaction catalysts for hydroxide exchange membrane fuel cells. **2023**, 327, 122442 ○
- 306 Green electrosynthesis of CuN<sub>3</sub> energetic materials coupled with energy-saving hydrogen production reaction. **2023**, 258, 110723 ○
- 305 Insight into the surface-reconstruction of metal-organic framework-based nanomaterials for the electrocatalytic oxygen evolution reaction. **2023**, 484, 215117 ○
- 304 Crystalline-amorphous heterostructures with assortative strong-weak adsorption pairs enable extremely high water oxidation capability toward multi-scenario water electrolysis. **2023**, 110, 108349 ○
- 303 Peony-like Cu<sub>x</sub>S<sub>y</sub> hybrid iron-nickel sulfide heterogeneous catalyst for boosting alkaline oxygen evolution reaction. **2023**, 38, 102788 ○
- 302 Molten salt-lithium process induced controllable surface defects in titanium oxide for efficient photocatalysis. **2023**, 328, 122494 ○
- 301 Ir-trimer anchored on the Co-supported Pd nanocrystals Opens the Ultra-efficient Channel on oxygen reduction reaction. **2023**, 622, 156857 ○
- 300 Surpassing Pt hydrogen production from {200} facet-riched polyhedral Rh<sub>2</sub>P nanoparticles by one-step synthesis. **2023**, 330, 122645 1

- 299 Synergetic regulation of CeO<sub>2</sub> modification and (W<sub>2</sub>O<sub>7</sub>)<sup>2-</sup> intercalation on NiFe-LDH for high-performance large-current seawater electrooxidation. **2023**, 330, 122612 ○
- 298 Regulating spin state of Fe active sites by the P-doping strategy for enhancing peroxymonosulfate activation. **2023**, 330, 122618 ○
- 297 Self-template synthesis of Fe<sub>Ni</sub>x doped porous carbon as efficient oxygen reduction reaction catalysts in zinc air batteries. **2023**, 64, 107239 ○
- 296 High-performance rechargeable metal-air batteries enabled by efficient charge transport in multielement random alloy electrocatalyst. **2023**, 330, 122631 ○
- 295 A Ni-MoO<sub>x</sub> composite catalyst for the hydrogen oxidation reaction in anion exchange membrane fuel cell. **2023**, 332, 122740 ○
- 294 Raw sugarcane juice assisted hybrid electrolysis for formic acid and hydrogen production based on reversible redox cycle of CoNi LDH. **2023**, 331, 122559 ○
- 293 Synergistic performance of Zn<sup>2+</sup> incorporated bimetallic Cobalt sulfide for the hydrogen evolution reaction in an alkaline medium. **2023**, 178, 111332 ○
- 292 Advances in the synthesis and applications of 2D MXene-metal nanomaterials. **2023**, 38, 102873 ○
- 291 Defect-engineered TiO<sub>2</sub> nanotube cathode for nitrate reduction to ammonia and upcycling into (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> in the paired electrolysis system. **2023**, 330, 122658 ○
- 290 Hydrogen-Bond Regulation of the Microenvironment of Ni(II)-Porphyrin Bifunctional Electrocatalysts for Efficient Overall Water Splitting. ○
- 289 Recent developments in heterogeneous electrocatalysts for ambient nitrogen reduction to ammonia: Activity, challenges, and future perspectives. **2023**, 176, 113197 1
- 288 Main-Group s-Block Element Lithium Atoms within Carbon Frameworks as High-Active Sites for Electrocatalytic Reduction Reactions. ○
- 287 Mo-Doped Ni<sub>3</sub>S<sub>2</sub> Nanosheet Arrays for Overall Water Splitting. **2023**, 6, 6066-6075 ○
- 286 Magnetic carbon nanocomposites via the graphitization of glucose and their induction heating. **2023**, 170139 ○
- 285 Recent progress of Ni-based catalysts for methanol electrooxidation reaction in alkaline media. **2023**, 2, 100055 ○
- 284 Deciphering engineering principle of three-phase interface for advanced gas-involved electrochemical reactions. **2023**, 80, 302-323 ○
- 283 Synergistic double-atom catalysts of metal-boron anchored on g-C<sub>2</sub>N for electrochemical nitrogen reduction: Mechanistic insight and catalyst screening. **2023**, 80, 350-360 ○
- 282 Hierarchical porous tri-metallic NiCoFe-Se/CFP derived from Ni-Co-Fe Prussian blue analogues as efficient electrocatalyst for oxygen evolution reaction. **2023**, 642, 638-647 ○

- 281 Three-dimensional ordered macroporous molybdenum doped NiCoP honeycomb electrode for two-step water electrolysis. **2023**, 642, 13-22 ○
- 280 Strong phosphide-metaphosphate interaction in RuP/CoNiP<sub>4</sub>O<sub>12</sub> for enhanced electrocatalytic water splitting. **2023**, 328, 122447 ○
- 279 Bifunctional Co<sub>3</sub>S<sub>4</sub> Nanowires for Robust Sulfion Oxidation and Hydrogen Generation with Low Power Consumption. **2023**, 33, 2212183 ○
- 278 Direct Detection of Fe VI Water Oxidation Intermediates in an Aqueous Solution. **2023**, 135, ○
- 277 Correlating the Experimentally Determined CO Adsorption Enthalpy with the Electrochemical CO Reduction Performance on Cu Surfaces. **2023**, 135, ○
- 276 Direct Growth of Uniform Bimetallic Core-Shell or Intermetallic Nanoparticles on Carbon via a Surface-Confinement Strategy for Electrochemical Hydrogen Evolution Reaction. **2023**, 33, 2212097 ○
- 275 Recent progress in Pd based electrocatalysts for electrochemical nitrogen reduction to ammonia. **2023**, 931, 117174 ○
- 274 Ball milling as an effective method for improving oxygen evolution reaction electrocatalyst Ca<sub>3</sub>Co<sub>4</sub>O<sub>9</sub>. **2023**, 931, 117182 ○
- 273 Disordered Au Nanoclusters for Efficient Ammonia Electrosynthesis. **2023**, 16, ○
- 272 A Ni-MOF derived graphene oxide combined Ni<sub>3</sub>S<sub>2</sub>/Ni/C composite and its use in the separator coating for lithium sulfur batteries. **2023**, 25, 5559-5568 ○
- 271 Complementary Design in Multicomponent Electrocatalysts for Electrochemical Nitrogen Reduction: Beyond the Leverage in Activity and Selectivity. **2023**, 62, ○
- 270 A controllable cobalt-doping improve electrocatalytic activity of ZnO basal plane for oxygen evolution reaction: A first-principles calculation study. **2023**, 932, 117191 ○
- 269 A flow-through electrode for hydrogen production from water splitting by mitigating bubble induced overpotential. **2023**, 561, 232733 1
- 268 Exploring efficient hydrogen evolution electrocatalysts of nonmetal atom doped Mo<sub>2</sub>CO<sub>2</sub> MXenes by first-principles screening. **2023**, 25, 5056-5065 ○
- 267 Low-Voltage Hydrogen Peroxide Electrolyzer for Highly Efficient Power-to-Hydrogen Conversion. **2023**, 11, 2599-2606 ○
- 266 Directly transferring nanostructural platinum into Pt<sub>x</sub>Ay-type nanocompounds for effective catalysis. **2023**, 31, 100996 ○
- 265 Evaluating the stability of Ir single atom and Ru atomic cluster oxygen evolution reaction electrocatalysts. **2023**, 444, 141982 ○
- 264 Alkaline Hydrogen Oxidation Reaction Catalysts: Insight into Catalytic Mechanisms, Classification, Activity Regulation and Challenges. **2023**, 4, ○

- 263 Zhang-Rice singlets state formed by two-step oxidation for triggering water oxidation under operando conditions. **2023**, 14,
- 262 Near ambient N<sub>2</sub> fixation on solid electrodes versus enzymes and homogeneous catalysts. **2023**, 7, 184-201
- 261 High-concentration electrosynthesis of formic acid/formate from CO<sub>2</sub>: reactor and electrode design strategies.
- 260 Robust and Promising Electrocatalytic Oxygen Evolution Reaction by Activated Cu<sub>2</sub>O/B Amorphous Nanosheets. **2023**, 11, 2541-2553
- 259 Constructing Robust Bi Active Sites In Situ on Bi<sub>2</sub>O<sub>3</sub> for Efficient and Selective Photoreduction of CO<sub>2</sub> to CH<sub>4</sub> via Directional Transfer of Electrons. **2023**, 13, 2513-2522
- 258 Interface-Enhanced SiO<sub>x</sub>/Ru Heterocatalysts for Efficient Electrochemical Water Splitting. **2023**, 15, 8200-8207
- 257 Electrocatalytic Reduction of CO<sub>2</sub> in Ionic Liquid-Based Electrolytes. **2022**, 343-357
- 256 Pseudo-Pt Monolayer for Robust Hydrogen Oxidation.
- 255 Recent advances of ruthenium-based electrocatalysts for hydrogen energy. **2023**, 5, 225-239
- 254 Plasma-synthesized platinum single atom and nanoparticle catalysts for high-current density hydrogen evolution. **2023**, 460, 141676
- 253 Core-shell nanoparticle enhanced Raman spectroscopy in situ probing the composition and evolution of interfacial species on PtCo surfaces.
- 252 A universal synthesis of ultrathin Pd-based nanorings for efficient ethanol electrooxidation. **2023**, 10, 1416-1424
- 251 Hierarchical Pt-In Nanowires for Efficient Methanol Oxidation Electrocatalysis. **2023**, 28, 1502
- 250 Hollow carbon spheres with isolated Ni atoms on both external and internal surfaces for efficient CO<sub>2</sub> electroreduction. **2023**, 28, 101386
- 249 Toward In Situ Atomistic Design of Catalytic Active Sites via Controlled Atmosphere Transmission Electron Microscopy. **2023**, 4, 275-286
- 248 N/C doped nano-size IrO<sub>2</sub> catalyst of high activity and stability in proton exchange membrane water electrolysis. **2023**,
- 247 Boosting Oxygen Electrocatalytic Activity of Fe<sub>3</sub>O<sub>4</sub> Catalysts by Phosphorus Incorporation. **2023**, 145, 3647-3655
- 246 Fe/Ni redox synergistic sodium persulfate photocatalytic depolymerization of the sinocalamus oldhami alkali lignin for the directional synthesis of aromatic aldehydes.

- 245 Lignin-derived dual-doped carbon nanocomposites as low-cost electrocatalysts. **2023**, 663, 131105 ○
- 244 Mechanical Understanding of Li<sup>+</sup>/O<sub>2</sub> Batteries: The Critical Role of Forming Intermediate \*Li<sub>2</sub>O. **2023**, 14, 1604-1608 ○
- 243 A review on cobalt-based oxides electrocatalytic materials for electrochemical water splitting. **2023**, 29, 1273-1284 ○
- 242 Surface Curvature Effect on Dual-Atom Site Oxygen Electrocatalysis. **2023**, 8, 1330-1335 ○
- 241 Comprehensive understanding and rational regulation of microenvironment for gas-involving electrochemical reactions. ○
- 240 First-principle investigation of structures and energy properties of  $\text{Pt}_3\text{Cu}_n$  ( $n=1-10$ ) nanoclusters. **2023**, 142, ○
- 239 Roll-to-Roll Production of Electrocatalysts Achieving High-Current Alkaline Water Splitting. ○
- 238 Atomic Scaled Depth Correlation to the Oxygen Reduction Reaction Performance of Single Atom Ni Alloy to the NiO<sub>2</sub> Supported Pd Nanocrystal. **2023**, 10, ○
- 237 Toward data- and mechanistic-driven volcano plots in electrocatalysis. ○
- 236 Interplay of Active Sites and Microenvironment in High-Rate Electrosynthesis of H<sub>2</sub>O<sub>2</sub> on Doped Carbon. **2023**, 13, 2780-2789 ○
- 235 Nanostructure Engineering and Electronic Modulation of a PtNi Alloy Catalyst for Enhanced Oxygen Reduction Electrocatalysis in Zinc-Air Batteries. **2023**, 14, 1740-1747 ○
- 234 High-Performance Bifunctional Porous Iron-Rich Phosphide/Nickel Nitride Heterostructures for Alkaline Seawater Splitting. 2207082 ○
- 233 Cobalt nickel boride as electrocatalyst for the oxidation of alcohols in alkaline media. **2023**, 5, 024005 ○
- 232 Amorphous nickel tungstate nanocatalyst boosts urea electrooxidation. **2023**, 460, 141826 ○
- 231 First-principles study of the effect of the local coordination environment on the electrochemical activity of Pd<sub>1</sub>-C<sub>x</sub>N<sub>y</sub> single atom catalysts. **2023**, 270, 118551 ○
- 230 CO<sub>2</sub> Reduction Mechanism on the Cu<sub>2</sub>O(110) Surface: A First-Principles Study. ○
- 229 Post-synthetic Chemical Fixation of Fe<sup>2+</sup> in MOF to Prepare Fe<sub>2</sub>N-Embedded N-Doped Graphene Nanoribbons for Superior Oxygen Reduction Reaction. **2023**, 18, ○
- 228 Optimizing the Pd Sites in Pure Metallic Aerogels for Efficient Electrocatalytic H<sub>2</sub>O<sub>2</sub> Production. **2023**, 35, ○



- 227 Tuning Catalytic Performance of C 2 N/GaN Heterostructure for Hydrogen Evolution Reaction by Doping. **2023**, 6, ○
- 226 Mechanistic insight into hydrothermally prepared molybdenum-based electrocatalyst for overall water splitting. **2023**, 445, 142050 ○
- 225 Tuning of magnetic, electronic and electrolytic water properties of silicene supported precious-metal by non-metal doping and vacancy defect. **2023**, 38, 100486 ○
- 224 Super-hydrophilic/super-aerophobic Ni<sub>2</sub>P/Co(PO<sub>3</sub>)<sub>2</sub> heterostructure for high-efficiency and durable hydrogen evolution electrocatalysis at large current density in alkaline fresh water, alkaline seawater and industrial wastewater. **2023**, ○
- 223 A derivation of the conditions under which bosonic operators exactly capture fermionic structure and dynamics. **2023**, 158, 094112 ○
- 222 Recent Progress in Surface-Defect Engineering Strategies for Electrocatalysts toward Electrochemical CO<sub>2</sub> Reduction: A Review. **2023**, 13, 393 ○
- 221 Metal organic frameworks: Mastery in electroactivity for hydrogen and oxygen evolution reactions. **2023**, ○
- 220 The bifunctional 3D-on-2D FeCo/Ni(OH)<sub>2</sub> hierarchical nanocatalyst for industrial-level electrocatalytic water splitting. **2023**, ○
- 219 Materials for electrocatalysts in proton exchange membrane fuel cell: A brief review. 11, 1
- 218 Mott insulating ruthenium oxides for highly efficient oxygen evolution reaction. ○
- 217 Electrochemical Methods and Materials for Transition Metal-Based Electrocatalysts in Alkaline and Acidic Media. 219-248 ○
- 216 Coaxial Nanofiber IrOx@SbSnOx as an Efficient Electrocatalyst for Proton Exchange Membrane Dehumidifier. **2023**, 15, 10606-10620 ○
- 215 Edge/Basal Plane Half-Reaction Separation|Mechanism of Two-Dimensional Materials for Photocatalytic Water Splitting. **2023**, 8, 1416-1423 ○
- 214 A general strategy to generate oxygen vacancies in bimetallic layered double hydroxides for water oxidation. **2023**, 59, 3138-3141 ○
- 213 Recent Advancements in Nano-Metal-Based Electrocatalysts: Green Hydrogen Production and Storage. 43-71 ○
- 212 Role of Hydrogen Spillover in Electrocatalytic Hydrogen Evolution from Water Splitting. 147-168 ○
- 211 Surface synergistic effect of sub-20nm NiFeCr hydroxide nanodots yielding high oxygen evolution mass activities. **2023**, 461, 141917 ○
- 210 The Open Catalyst 2022 (OC22) Dataset and Challenges for Oxide Electrocatalysts. **2023**, 13, 3066-3084 1

- 209 In-situ/operando Raman techniques for in-depth understanding on electrocatalysis. **2023**, 461, 141939 ○
- 208 Flexible electronics based on one-dimensional inorganic semiconductor nanowires and two-dimensional transition metal dichalcogenides. **2023**, 108226 ○
- 207 Facet Engineering of Advanced Electrocatalysts Toward Hydrogen/Oxygen Evolution Reactions. **2023**, 15, ○
- 206 Can Metal-Nitrogen-Carbon Single-Atom Catalysts Boost the Electroreduction of Carbon Monoxide?. **2023**, 3, 943-952 ○
- 205 Proton-Coupled Electron Transfer of Cerium Oxide Nanoparticle Thin-Film Electrodes. **2023**, 127, 4015-4020 ○
- 204 Ambient Electrosynthesis toward Single-Atom Sites for Electrocatalytic Green Hydrogen Cycling. **2023**, 35, ○
- 203 MoS<sub>2</sub>/NiSe<sub>2</sub>/rGO Multiple-Interfaced Sandwich-like Nanostructures as Efficient Electrocatalysts for Overall Water Splitting. **2023**, 13, 752 ○
- 202 Synergistic FeBe Atom Pairs as Bifunctional Oxygen Electrocatalysts Boost Low-Temperature Rechargeable Zn-Air Battery. **2023**, 62, ○
- 201 Synergistic FeBe Atom Pairs as Bifunctional Oxygen Electrocatalysts Boost Low-Temperature Rechargeable Zn-Air Battery. **2023**, 135, ○
- 200 Decoupling Effects of Electrostatic Gating on Electronic Transport and Interfacial Charge-Transfer Kinetics at Few-Layer Molybdenum Disulfide. ○
- 199 Ultralow overpotential nitrate reduction to ammonia via a three step relay mechanism. ○
- 198 Rhenium-Based Electrocatalysts for Water Splitting. ○
- 197 Angle-independent solar radiation capture by 3D printed lattice structures for efficient photoelectrochemical water splitting. ○
- 196 Multicomponent 3d-Metal Nanoparticles in Amorphous Carbon Sponge for Electrocatalysis Water Splitting. **2023**, 6, 3537-3548 ○
- 195 Regulating the activity of intrinsic sites in covalent organic frameworks by introducing electro-withdrawing groups towards highly selective H<sub>2</sub>O<sub>2</sub> electrosynthesis. **2023**, 49, 101792 ○
- 194 In situ rapid and deep self-reconstruction of Fe-doped hydrate NiMoO<sub>4</sub> for stable water oxidation at high current densities. **2023**, 461, 142081 ○
- 193 Atomically dispersed indium and cerium sites for selectively electroreduction of CO<sub>2</sub> to formate. ○
- 192 Hybrid polymer gels for energy applications. ○

- 191 Al-Incorporated Cobalt-Layered Double Hydroxides for Enhanced Oxygen Evolution through Morphology and Electronic Structure Regulation. **2023**, 15, 11621-11630 ○
- 190 Coordination Inversion of the Tetrahedrally Coordinated Ru<sub>4</sub>f Surface Complex on RuO<sub>2</sub>(100) and Its Decisive Role in the Anodic Corrosion Process. **2023**, 13, 3433-3443 ○
- 189 In Situ Fabrication of Mn-Doped NiMoO<sub>4</sub> Rod-like Arrays as High Performance OER Electrocatalyst. **2023**, 13, 827 ○
- 188 Renewable formate from sunlight, biomass and carbon dioxide in a photoelectrochemical cell. **2023**, 14, 1 ○
- 187 Biomimetic three-dimensional multilevel nanoarray electrodes with superaerophobicity as efficient bifunctional catalysts for electrochemical water splitting. ○
- 186 Catalyst Stability Considerations for Electrochemical Energy Conversion with Non-Noble Metals: Do We Measure on What We Synthesized?. **2023**, 8, 1607-1612 ○
- 185 Chiral electrocatalysts eclipse water splitting metrics through spin control. **2023**, 14, ○
- 184 Coupling Hydrazine Oxidation with Seawater Electrolysis for Energy-Saving Hydrogen Production over Bifunctional CoNC Nanoarray Electrocatalysts. 2300019 ○
- 183 A reversible perovskite air electrode for active and durable oxygen reduction and evolution reactions via the A-site entropy engineering. **2023**, 63, 89-98 ○
- 182 Development of copper foam-based composite catalysts for electrolysis of water and beyond. **2023**, 7, 1604-1626 ○
- 181 Regulating Hollow Carbon Cage Supported NiCo Alloy Nanoparticles for Efficient Electrocatalytic Hydrogen Evolution Reaction. **2023**, 15, 12078-12087 ○
- 180 Optimizing Electronic and Geometrical Structure of Vanadium Doped Cobalt Phosphides for Enhanced Electrocatalytic Hydrogen Evolution. ○
- 179 Degradation of methyl orange by dielectric films based on contact-electro-catalysis. **2023**, 15, 6243-6251 ○
- 178 The material-microorganism interface in microbial hybrid electrocatalysis systems. **2023**, 15, 6009-6024 ○
- 177 Stabilizing agents assisted construction of monometallic self-supporting Palladium NCs with ultrafine nanostructures and rich surface area for highly efficient direct ethanol fuel cell. **2023**, 933, 117297 ○
- 176 Self-Accommodation Induced Electronic Metal-Support Interaction on Ruthenium Site for Alkaline Hydrogen Evolution Reaction. ○
- 175 Direct Oxygen-Oxygen Cleavage through Optimizing Interatomic Distances in Dual Single-atom Electrocatalysts for Efficient Oxygen Reduction Reaction. **2023**, 62, ○
- 174 Regulating the electronic structure of single-atom catalysts for electrochemical energy conversion. ○

- 173 Direct Oxygen-Oxygen Cleavage through Optimizing Interatomic Distances in Dual Single-atom Electrocatalysts for Efficient Oxygen Reduction Reaction. **2023**, 135, ○
- 172 Enhanced electrocatalytic performance for oxygen evolution reaction via active interfaces of Co<sub>3</sub>O<sub>4</sub> arrays@FeO<sub>x</sub>/Carbon cloth heterostructure by plasma-enhanced atomic layer deposition. **2023**, 34, 225703 ○
- 171 Coupling Ferrocyanide-Assisted PW/PB Redox with Efficient Direct Seawater Electrolysis for Hydrogen Production. **2023**, 13, 3692-3701 ○
- 170 Heterogeneous metal trimer catalysts on Mo<sub>2</sub>TiC<sub>2</sub>O<sub>2</sub> MXene for highly active N<sub>2</sub> conversion to NH<sub>3</sub>. **2023**, 539, 113036 ○
- 169 pH Effects in a Model Electrocatalytic Reaction Disentangled. ○
- 168 Wetting of a Stepped Platinum (211) Surface. **2023**, 127, 4741-4748 ○
- 167 Hybrid Heterostructure Ni<sub>3</sub>N|NiFeP/FF Self-Supporting Electrode for High-Current-Density Alkaline Water Electrolysis. **2023**, 7, ○
- 166 Temperature-Dependent Electrosynthesis of C<sub>2</sub> Oxygenates from Oxalic Acid Using Gallium Tin Oxides. **2023**, 13, 3676-3683 ○
- 165 Modulating the electronic structure of hollow Cu / Cu<sub>3</sub>P hetero-nanoparticles to boost the oxygen reduction performance in long-lasting Zn-air battery. ○
- 164 Spinel-Anchored Iridium Single Atoms Enable Efficient Acidic Water Oxidation via Intermediate Stabilization Effect. **2023**, 13, 3757-3767 ○
- 163 Single-atom catalyst application in distributed renewable energy conversion and storage. ○
- 162 Recent Advances of Transition Metal Basic Salts for Electrocatalytic Oxygen Evolution Reaction and Overall Water Electrolysis. **2023**, 15, ○
- 161 Chlorine-induced mixed valence of CuO<sub>x</sub>/C to promote the electroreduction of carbon dioxide to ethylene. ○
- 160 Temperature-driven phase transformation and element segregation in Pd-Ru immiscible alloy nanoparticles: Spatial resolving of elements and insights for electrocatalysis. ○
- 159 Approach to Evaluation of Electrocatalytic Water Splitting Parameters, Reflecting Intrinsic Activity: Toward the Right Pathway. ○
- 158 Research on engineered electrocatalysts for efficient water splitting: a comprehensive review. **2023**, 25, 8992-9019 ○
- 157 A Bimetallic Phosphide@Hydroxide Interface for High-Performance 5-Hydroxymethylfurfural Electro-Valorization. **2023**, 127, 4967-4974 ○
- 156 Recent Advances on Transition-Metal-Based Layered Double Hydroxides Nanosheets for Electrocatalytic Energy Conversion. 2207519 ○

- 155 Strain engineering of high-entropy alloy catalysts for electrocatalytic water splitting. **2023**, 26, 106326 ○
- 154 Sphere-like Naphthalene-Based Microporous Nickel Phosphonate Facile for Asymmetric Supercapacitor Devices and Bifunctional Oxygen Electrocatalysts. **2023**, 6, 3347-3356 ○
- 153 Melamine-Based Hydrogen-bonded Systems as Organoelectrocatalysts for Water Oxidation Reaction. ○
- 152 Advanced hematite nanomaterials for newly emerging applications. **2023**, 14, 2776-2798 ○
- 151 Progress and prospects of international carbon peaking and carbon neutral research Based on bibliometric analysis (1991-2022). 11, ○
- 150 Sulphur vs NH Group: Effects on the CO<sub>2</sub> Electroreduction Capability of Phenylenediamine-Cp Cobalt Complexes. **2023**, 28, 2364 ○
- 149 Morphology Regulated Hierarchical Rods-, Buds-, and Sheets-like CoMoO<sub>4</sub> for Electrocatalytic Oxygen Evolution Reaction. **2023**, 16, 2441 ○
- 148 Synthesis, Properties and Reactivity Studies of a Hetero-dicopper Complex Consisting of a Porphyrin and a Bispyridylamine Moiety Connected by a Xanthene Backbone. ○
- 147 Highly durable fuel cell electrocatalyst with low-loading Pt-Co nanoparticles dispersed over single-atom Pt-Co-N-graphene nanofiber. **2023**, 3, 100541 ○
- 146 The surface states of transition metal X-ides under electrocatalytic conditions. **2023**, 158, 124705 ○
- 145 Recent advances in catalyst design and activity enhancement induced by a magnetic field for electrocatalysis. **2023**, 11, 7802-7832 ○
- 144 Coupling interface constructions of FeOOH/NiCo<sub>2</sub>S<sub>4</sub> by microwave-assisted method for efficient oxygen evolution reaction. ○
- 143 Synthesis of Isostructural Intermetallic Sn<sub>2</sub>PbBiPt Platform Materials for Catalytic Investigations. **2023**, 62, 4688-4695 ○
- 142 Biofuel production, hydrogen production and water remediation by photocatalysis, biocatalysis and electrocatalysis. ○
- 141 The RuO<sub>2</sub>/NiRu heterogeneous interface optimizes the d-band center of the NiRu catalyst for high-performance alkaline hydrogen evolution reaction. ○
- 140 Cu Nanowire Networks with Well-Defined Geometrical Parameters for Catalytic Electrochemical CO<sub>2</sub> Reduction. **2023**, 6, 4190-4200 ○
- 139 Analysis of the Scale of Global Human Needs and Opportunities for Sustainable Catalytic Technologies. **2023**, 66, 338-374 ○
- 138 Controlled synthesis of MOF-derived hollow and yolk-shell nanocages for improved water oxidation and selective ethylene glycol reformation. **2023**, 100118 ○

- 137 Degradation of Methylene Blue by Hot Electrons Transfer in SnSe. **2023**, 10, 0
- 136 Ensemble Effect of Ruthenium Single-Atom and Nanoparticle Catalysts for Efficient Hydrogen Evolution in Neutral Media. 0
- 135 In Situ Construction of Cobalt-Doped High-Dispersive Heazlewoodite for Efficient Oxygen Evolution. **2023**, 37, 5441-5447 0
- 134 Neural network potentials for accelerated metadynamics of oxygen reduction kinetics at Au/water interfaces. **2023**, 14, 3913-3922 0
- 133 Theoretical investigation of the non-metal sites of two-dimensional conjugated metal-organic frameworks based on benzenehexathiol for hydrogen evolution activity enhancement. 0
- 132 Supramolecular tuning of supported metal phthalocyanine catalysts for hydrogen peroxide electrosynthesis. **2023**, 6, 234-243 0
- 131 Metal functionalization of two-dimensional nanomaterials for electrochemical carbon dioxide reduction. **2023**, 15, 6456-6475 0
- 130 A High-Entropy Oxide as High-Activity Electrocatalyst for Water Oxidation. **2023**, 17, 5329-5339 1
- 129 A Spectroscopic Study on Nitrogen Electrooxidation to Nitrate. 0
- 128 A Spectroscopic Study on Nitrogen Electrooxidation to Nitrate. 0
- 127 Stable Mo/1T-MoS<sub>2</sub> Monolith Catalyst with a Metallic Interface for Large Current Water Splitting. 0
- 126 Theoretical study on hydrogen evolution reaction in transition metal borides. 0
- 125 Surface Reconstruction of Ni/Fe Layered Double Hydroxide Inducing Chloride Ion Blocking Materials for Outstanding Overall Seawater Splitting. 2214069 0
- 124 Boosting alkaline hydrogen evolution performance by constructing ultrasmall Ru clusters/Na<sup>+</sup>, K<sup>+</sup>-decorated porous carbon composites. 0
- 123 Crystalline/Amorphous Interface Coupling of Ni<sub>3</sub>S<sub>2</sub>/NiPx/NF with Enhanced Activity and Stability for Electrocatalytic Oxygen Evolution. **2023**, 15, 15533-15544 0
- 122 Supporting Trimetallic Metal-Organic Frameworks on S/N-Doped Carbon Macroporous Fibers for Highly Efficient Electrocatalytic Oxygen Evolution. 0
- 121 Engineering an iron atom-cluster nanostructure towards efficient and durable electrocatalysis. **2023**, 11, 8202-8212 0
- 120 Interface engineering of CeO<sub>2</sub> nanoparticle/Bi<sub>2</sub>WO<sub>6</sub> nanosheet nanohybrids with oxygen vacancies for oxygen evolution reactions under alkaline conditions. **2023**, 13, 8873-8881 0

- 119 Interface Engineering of Oxygen-Vacancy-Rich VO-NiFe<sub>2</sub>O<sub>4</sub>@Ni<sub>2</sub>P Heterostructure for Highly Efficient Oxygen Evolution Reaction. ○
- 118 Fullerene nanowisker nanocomposite: Current stance and high-tech opportunities. **2022**, 61, 1908-1923 ○
- 117 Development of High-Performance Polymer Electrolyte Membranes through the Application of Quantum Dot Coatings to Nafion Membranes. **2023**, 15, 15616-15624 ○
- 116 Surface Reduced Manganese States as a Source of Oxygen Reduction Activity in BaMnO<sub>3</sub>. 2214883 ○
- 115 Effect of Adsorbed Sulfate on the Product Selectivity of Ethanol Oxidation on Pt Nanoparticles in Acidic Solution. **2023**, 127, 5743-5753 ○
- 114 Phosphorus Optimized Metastable Hexagonal-Close-Packed Phase Nickel for Efficient Hydrogen Peroxide Production in Neutral Media. 2300636 ○
- 113 Two-Dimensional Hierarchical CoTe/NiFe Layered Double Hydroxide Heterostructure for High-Performance Electrocatalytic Water Oxidation. **2023**, 6, 3432-3441 ○
- 112 Functional nanomaterials for energy and catalysis, what's next?. **2023**, 100001 ○
- 111 Redox-mediated in-situ fabrication of nanoparticle-packed porous Ag films with excellent surface-enhanced Raman scattering performance. **2023**, 33, 539-552 ○
- 110 On the mechanistic complexity of oxygen evolution: potential-dependent switching of the mechanism at the volcano apex. ○
- 109 Modulation of \*CH<sub>x</sub>O Adsorption to Facilitate Electrocatalytic Reduction of CO<sub>2</sub> to CH<sub>4</sub> over Cu-Based Catalysts. **2023**, 145, 6622-6627 ○
- 108 Hierarchical iron-nickel oxyhydroxide nanosheets directly grown on porous TiFe<sub>2</sub>-based intermetallics for robust oxygen evolution. **2023**, 59, 4519-4522 ○
- 107 Bonds over Electrons: Proton Coupled Electron Transfer at Solid-Solution Interfaces. **2023**, 145, 7050-7064 ○
- 106 Theory of Anisotropic Metal Nanostructures. **2023**, 123, 4146-4183 ○
- 105 Tailoring the electronic structure of PdAg alloy nanowires for high oxygen reduction reaction. **2023**, 100068 ○
- 104 Singlet Oxygen Induced Site-Specific Etching Boosts Nitrogen-Carbon Sites for High-Efficiency Oxygen Reduction. ○
- 103 Hierarchical Polyoxometallate Confined in Woven Thin Films for Single-Cluster Catalysis: Simplified Electrodes for Far-Fetched O<sub>2</sub> Evolution from Seawater. **2023**, 13, 4587-4596 ○
- 102 Oxygen Evolution/Reduction Reaction Catalysts: From In Situ Monitoring and Reaction Mechanisms to Rational Design. ○

- 101 Theoretical screening of single atom doping on  $\text{EGa}_2\text{O}_3$  (100) for photoelectrochemical water splitting with high activity and low limiting potential. **2023**, 15, 6913-6919 ○
- 100 Precise electronic structure modulation on MXene-based single atom catalysts for high-performance electrocatalytic  $\text{CO}_2$  reduction reaction: A first-principle study. **2023**, 642, 273-282 ○
- 99 Designing Superhydrophilic Hydrogels as Binder-Free Catalysts for Enhanced Oxygen Evolution Performance. **2023**, 62, 5543-5551 ○
- 98 Non-noble metal  $\text{Fe}_2\text{O}_3$ @NiO as efficient bifunctional catalysts for water splitting. **2023**, 8, ○
- 97 First-Principles Study of Two-Dimensional Layered  $\text{MoSi}_2\text{N}_4$  and  $\text{WSi}_2\text{N}_4$  for Photocatalytic Water Splitting. **2022**, 96, 3283-3289 ○
- 96 Chemical Strain Engineering of Copper Atoms on Continuous Three-Dimensional-Nanopatterned Nickel Nitride to Accelerate Alkaline Hydrogen Evolution. **2023**, 11, 5229-5237 ○
- 95 Ultrahigh Mass Activity Pt Entities Consisting of Pt Single atoms, Clusters, and Nanoparticles for Improved Hydrogen Evolution Reaction. 2205885 ○
- 94 Carbon-Based Electrodes for Advanced Zinc-Air Batteries: Oxygen-Catalytic Site Regulation and Nanostructure Design. **2023**, 6, ○
- 93 Highly Stable Pt-Based Oxygen Reduction Electrocatalysts toward Practical Fuel Cells: Progress and Perspectives. **2023**, 16, 2590 ○
- 92 MOF-Derived Highly Active Co-N-C Hybrid Arrays for Efficient Hydrogen Evolution Reaction. ○
- 91 One-dimensional metal-organic frameworks: Synthesis, structure and application in electrocatalysis. **2023**, 1, 100010 ○
- 90 Doping of Cr to Regulate the Valence State of Cu and Co Contributes to Efficient Water Splitting. **2023**, 15, 16552-16561 ○
- 89 Electrochemical hydrogen evolution on Pt-based catalysts from a theoretical perspective. **2023**, 158, 141002 ○
- 88 MXene- $\text{MoS}_2$  nanocomposites via chemical vapor deposition with enhanced electrocatalytic activity for hydrogen evolution. ○
- 87 Amorphous Oxysulfide Reconstructed from Spinel  $\text{NiCo}_2\text{S}_4$  for Efficient Water Oxidation. ○
- 86 Passivating Oxygen Evolution Activity of NiFe-LDH through Heterostructure Engineering to Realize High-Efficiency Electrocatalytic Formate and Hydrogen Co-Production. ○
- 85 Molten salt assisted to synthesize molybdenumtungenium boride for hydrogen generation in wide pH range. **2023**, ○
- 84 Graphited carbon black curled nanoribbons simultaneously boosted stability and electrocatalytic activity of  $1\text{T-MoS}_2/\text{MoO}_3$  toward hydrogen evolution. **2023**, 949, 169831 ○



- 83 Sphere-like PdNi Alloy: Unveiling the Twin Functional Properties toward Oxygen Reduction and Temperature-Dependent Methanol Oxidation for Alkaline Direct Methanol Fuel Cells. **2023**, 11, 5345-5355 ○
- 82 Surfactant-Free Colloidal Syntheses of Precious Metal Nanoparticles for Improved Catalysts. **2023**, 13, 4903-4937 ○
- 81 Unraveling a bifunctional mechanism for methanol-to-formate electro-oxidation on nickel-based hydroxides. **2023**, 14, ○
- 80 Atomic design of carbon-based dual-metal site catalysts for energy applications. 1
- 79 Au Nanowires Decorated Ultrathin Co<sub>3</sub>O<sub>4</sub> Nanosheets toward Light-Enhanced Nitrate Electroreduction. ○
- 78 Self-Supporting Electrode Fabricated by Flowing Synthesis for Efficient Hydrogen Evolution Reaction. **2023**, 11, 5506-5514 ○
- 77 Unique (100) Surface Configuration Enables Promising Oxygen Reduction Performance for Pt<sub>3</sub>Co Nanodendrite Catalysts. **2023**, 15, 18217-18228 ○
- 76 Mechanistic Insights on Permeation of Water over Iron Cations in Nanoporous Silicon Oxide Films for Selective H<sub>2</sub> and O<sub>2</sub> Evolution. **2023**, 15, 17814-17824 ○
- 75 Fe<sup>3+</sup>-Preactivated Ni/Co-Based Antiperovskite Nitrides for Boosting Oxygen Evolution: Surface Tuning and Catalytic Mechanism. **2023**, 13, 5043-5052 ○
- 74 A corpus of CO<sub>2</sub> electrocatalytic reduction process extracted from the scientific literature. **2023**, 10, ○
- 73 Defects in Carbon-Based Materials for Electrocatalysis: Synthesis, Recognition, and Advances. **2023**, 56, 948-958 ○
- 72 Cu-doped Heterointerfaced Ru/RuSe<sub>2</sub> nanosheets with optimized H and H<sub>2</sub>O adsorption boost hydrogen evolution catalysis. ○
- 71 Design strategies of Pd-based electrocatalysts for efficient oxygen reduction. ○
- 70 Fine-tuning of ultrathin carbon shells coated on metal nanoparticles: carbon etching and defect healing effects. ○
- 69 Electrocatalysis on Atomically Precise Metal Nanoclusters. **2023**, 161-193 ○
- 68 Atomically Precise Metal Nanoclusters as Electrocatalysts. **2023**, 195-225 ○
- 67 Importance of the volcano slope to comprehend activity and selectivity trends in electrocatalysis. **2023**, 101284 ○
- 66 Lamella-heterostructured nanoporous bimetallic iron-cobalt alloy/oxyhydroxide and cerium oxynitride electrodes as stable catalysts for oxygen evolution. **2023**, 14, ○

- 65 Regulating the steric effect at the zero-dimensional interface. **2023**, 53, 0301 ○
- 64 DFT and simulation of solid-liquid interface properties and processes. **2023**, ○
- 63 Metal Oxides and Sulfides for Overall Water Splitting. **2022**, 1-28 ○
- 62 Synergistic marriage of CO<sub>2</sub> reduction and sulfide oxidation towards a sustainable co-electrolysis process. **2023**, 332, 122718 ○
- 61 Atomically Structured Metal-Organic Frameworks: A Powerful Chemical Path for Noble Metal-Based Electrocatalysts. ○
- 60 High-entropy single-atom activated carbon catalysts for sustainable oxygen electrocatalysis. ○
- 59 High-Throughput First-Principles Prediction of Interfacial Adhesion Energies in Metal-on-Metal Contacts. **2023**, 15, 19624-19633 ○
- 58 Rational design from embedded chaos. ○
- 57 IrPd Nanoalloy-Structured Bifunctional Electrocatalyst for Efficient and pH-Universal Water Splitting. ○
- 56 Schottky junction with Bi/Bi<sub>2</sub>O<sub>3</sub> core-shell nanoparticle modified g-C<sub>3</sub>N<sub>4</sub> for boosting photocatalytic H<sub>2</sub>O<sub>2</sub> evolution from pure water. ○
- 55 WhereWulff: A Semiautonomous Workflow for Systematic Catalyst Surface Reactivity under Reaction Conditions. ○
- 54 Enhancement Mechanism of Pt/Pd-Based Catalysts for Oxygen Reduction Reaction. **2023**, 13, 1275 ○
- 53 Atomically dispersed Ru oxide catalyst with lattice oxygen participation for efficient acidic water oxidation. **2023**, ○
- 52 Hierarchical Porous Pt/ZrO<sub>2</sub> Nanoframework for Efficient Oxygen Reduction Reaction. **2023**, 13, 5397-5405 ○
- 51 Understanding the sulphur-oxygen exchange process of metal sulphides prior to oxygen evolution reaction. **2023**, 14, ○
- 50 Metal Oxide-Supported Metal Catalysts for Electrocatalytic Oxygen Reduction Reaction: Characterization Methods, Modulation Strategies, and Recent Progress. ○
- 49 Nanorod Array-Based Hierarchical NiO Microspheres as a Bifunctional Electrocatalyst for a Selective and Corrosion-Resistance Seawater Photo/Electrolysis System. **2023**, 13, 5516-5528 ○
- 48 Co-doped amorphous MoS<sub>x</sub> for efficient hydrogen evolution reaction in acid condition. ○

- 47 Active site recovery and N-N bond breakage during hydrazine oxidation boosting the electrochemical hydrogen production. **2023**, 14,
- 46 Boron-Doped Activated Carbon Supports for Cobalt-Catalyzed Oxygen Evolution in Alkaline Electrolyte. **2023**, 15, 18771-18780
- 45 Enhanced hydrogen evolution reaction activity of FeNi layered double hydroxide modified with Ruthenium nanoparticles at high current density. **2023**, 938, 117451
- 44 Synergetic N-doped carbon with MoPd alloy for robust oxygen reduction reaction.
- 43 Design of high-performance ion-doped CoP systems for hydrogen evolution: From multi-level screening calculations to experiment. **2023**,
- 42 An energy-saving support made of silver nanowire aerogel for hydrogen evolution reaction. **2023**, 4, 101377
- 41 Directly Grow Ultrasmall Co<sub>2</sub>P QDs on MoS<sub>2</sub> Nanosheets to Form Heterojunctions Greatly Boosting Electron Transfer toward Hydrogen Evolution.
- 40 Recent Advances in Water-Splitting Electrocatalysts Based on Electrodeposition. **2023**, 16, 3044
- 39 Recent Progress on Non-Carbon-Supported Single-Atom Catalysts for Electrochemical Conversion of Green Energy.
- 38 Transition metal embedded in nonmetal-doped T-carbon [110]: A superior synergistic trifunctional electrocatalyst for HER, OER and ORR. **2023**,
- 37 Crafting Pyrolysis-Free MnO<sub>x</sub> Catalysts.
- 36 Recent Advances, Properties, Fabrication and Opportunities in Two-Dimensional Materials for their Potential Sustainable Applications. **2023**, 102780
- 35 Integration of Metal-Organic Frameworks and Metals: Synergy for Electrocatalysis.
- 34 Regulating Electronic Structure of Iron Nitride by Tungsten Nitride Nanosheets for Accelerated Overall Water Splitting.
- 33 Oxygen Vacancies Unfold the Catalytic Potential of NiFe-Layered Double Hydroxides by Promoting Their Electronic Transport for Oxygen Evolution Reaction. 6000-6012
- 32 Regulation of electrical double layers promotes electrochemical reduction of carbon dioxide. **2023**, 276, 118759
- 31 The Enhancing Effect of Stable Oxygen Functional Groups on Porous-Carbon-Supported Pt Catalysts for Alkaline Hydrogen Evolution. **2023**, 13, 1415
- 30 Gap engineering of sandwich plasmonic gap nanostructures for boosting plasmon-enhanced electrocatalysis.

- 29 Intrinsic Carbon Structural Imperfections for Enhancing Energy Conversion Electrocatalysts. **2023**, 143060 ○
- 28 Ultralow overpotential nitrate reduction to ammonia via a three-step relay mechanism. ○
- 27 Performance Evolution of Typical Electrocatalysts with Electrolyte Temperature during Alkaline Water Electrolysis. ○
- 26 Au Cluster-derived Electrocatalysts for CO<sub>2</sub> Reduction. ○
- 25 Boosting heterogeneous catalyst discovery by structurally constrained deep learning models. **2023**, 30, 101541 ○
- 24 Epitaxial Design of Complex Nickelates as Electrocatalysts for the Oxygen Evolution Reaction. ○
- 23 Construction of Cu<sub>2</sub>O-g-C<sub>3</sub>N<sub>4</sub>/MoS<sub>2</sub> composite material through the decoration of Cu<sub>2</sub>O nanoparticles onto the surface of two-dimensional g-C<sub>3</sub>N<sub>4</sub>/MoS<sub>2</sub> heterostructure for their application in electrochemical hydrogen evolution. **2023**, 347, 128416 ○
- 22 Single-Atom Cu Channel and N-Vacancy Engineering Enables Efficient Charge Separation and Transfer between C<sub>3</sub>N<sub>4</sub> Interlayers for Boosting Photocatalytic Hydrogen Production. 6280-6288 ○
- 21 Large current density for oxygen evolution from pyramidally-coordinated Co oxide. **2023**, 333, 122785 ○
- 20 Monolithic Nickel Cata Featured with High-Density Crystalline Steps for Stable Hydrogen Evolution at Large Current Density. ○
- 19 Ultrathin Carbon Coating and Defect Engineering Promote RuO<sub>2</sub> as an Efficient Catalyst for Acidic Oxygen Evolution Reaction with Super-High Durability. ○
- 18 Efficient Nitrate Generation through Electrochemical N<sub>2</sub> Oxidation with Nickel Oxyhydroxide Decorated Copper Hydroxide Driven by Solar Cells. ○
- 17 Constructing Novel Ternary Heterostructure of CeP<sub>5</sub>O<sub>14</sub>/WP/WS<sub>2</sub> to Enhance Catalytic Activity for Hydrogen Evolution in a Full pH Range. ○
- 16 Iron and cobalt phthalocyanine embedded electrospun carbon nanofiber-based catalysts for anion exchange membrane fuel cell cathode. **2023**, ○
- 15 Reaction environment impacts charge transfer but not chemical reaction steps in hydrogen evolution catalysis. **2023**, 6, 339-350 ○
- 14 CO<sub>2</sub> Conversion Toward Real-World Applications: Electrocatalysis versus CO<sub>2</sub> Batteries. ○
- 13 Boosting the direct conversion of NH<sub>4</sub>HCO<sub>3</sub> electrolyte to syngas on Ag/Zn zeolitic imidazolate framework derived nitrogen-carbon skeleton. ○
- 12 Pt-Fe-Co Ternary Metal Single Atom Catalyst for toward High Efficiency Alkaline Oxygen Reduction Reaction. **2023**, 16, 3684 ○

- 11 2D Cobalt Chalcogenide Heteronanostructures Enable Efficient Alkaline Hydrogen Evolution Reaction. ○
- 10 Yolk-Shell Structured Zinc-Cobalt-Ruthenium Alloy Oxide Assembled with Ultra-Small Nanoparticles: A Superior Cascade Catalyst toward Oxygen Evolution Reaction. ○
- 9 Fabrication of grass-like FeCoNiP/copper foam electrodes via cyclic voltammetry toward efficient overall water splitting reaction. **2023**, 141, 107205 ○
- 8 Mass Transport Modifies the Interfacial Electrolyte to Influence Electrochemical Nitrate Reduction. **2023**, 11, 7882-7893 ○
- 7 Tuning Catalytic Activity of NiCo Nanoparticles Synthesized by Gamma-Radiolytic Reduction of Acetate Aqueous Solutions. ○
- 6 Modulating the interfacial built-in electric field in oxygen vacancies-enriched Ru/MxOy@C (M=IV, Nb, Ta) ordered macroporous heterojunctions for electrocatalytic hydrogen production. **2023**, 467, 143374 ○
- 5 The role of ionomers in the electrolyte management of zero-gap MEA-based CO<sub>2</sub> electrolyzers: A Fumion vs. Nafion comparison. **2023**, 335, 122885 ○
- 4 Iron-incorporated Ni<sub>4</sub>Mo Hierarchical Nanorod Arrays for Promoted Electrocatalytic Oxygen Evolution Reaction. **2023**, 8, ○
- 3 Molecular Precursor Routes for Ag-Based Metallic, Intermetallic, and Metal Sulfide Nanoparticles: Their Comparative ORR Activity Trend at Solid|Liquid and Liquid|Liquid Interfaces. ○
- 2 Structurally Robust Honeycomb Layered Strontium Iridate as an Oxygen Evolution Electrocatalyst in Acid. 7322-7330 ○
- 1 Three-dimensional porous metal phosphide cathode electrodes prepared via electroless galvanic modification for alkaline water electrolysis. ○