

# CITATION REPORT

List of articles citing

## Hydrogen evolution by a metal-free electrocatalyst

DOI: 10.1038/ncomms4783

Nature Communications, 2014, 5, 3783.

**Source:** <https://exaly.com/paper-pdf/58910090/citation-report.pdf>

**Version:** 2024-04-26

This report has been generated based on the citations recorded by exaly.com for the above article. For the latest version of this publication list, visit the link given above.

The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

#	Paper	IF	Citations
1712	Graphitic Carbon Nitride Nanoribbons: Graphene-Assisted Formation and Synergic Function for Highly Efficient Hydrogen Evolution. <b>2014</b> , 126, 14154-14159		58
1711	Design of two-dimensional, ultrathin MoS <sub>2</sub> nanoplates fabricated within one-dimensional carbon nanofibers with thermosensitive morphology: high-performance electrocatalysts for the hydrogen evolution reaction. <b>2014</b> , 6, 22126-37		93
1710	Graphitic carbon nitride nanoribbons: graphene-assisted formation and synergic function for highly efficient hydrogen evolution. <b>2014</b> , 53, 13934-9		394
1709	Quantitative correlation between defect density and heterogeneous electron transfer rate of single layer graphene. <b>2014</b> , 136, 16609-17		159
1708	Assembling Fe(III)-Citrate Complexes on Graphitic Carbon Nitride for Coupling Photocatalysis with Fenton Reaction. <b>2014</b> , 1010-1012, 185-189		
1707	Monolayer MoS <sub>2</sub> films supported by 3D nanoporous metals for high-efficiency electrocatalytic hydrogen production. <b>2014</b> , 26, 8023-8		262
1706	Enhanced electrocatalytic activity of MoS <sub>2</sub> (x) on TCNQ-treated electrode for hydrogen evolution reaction. <b>2014</b> , 6, 17679-85		65
1705	Graphene and its composites with nanoparticles for electrochemical energy applications. <b>2014</b> , 9, 668-683		204
1704	Ethylenediamine-mediated synthesis of MnO <sub>2</sub> nano-octahedrons and their performance as electrocatalysts for the oxygen evolution reaction. <b>2014</b> , 6, 10896-901		29
1703	Cobalt sulfide nanosheet/graphene/carbon nanotube nanocomposites as flexible electrodes for hydrogen evolution. <b>2014</b> , 53, 12594-9		131
1702	Surface polarization matters: enhancing the hydrogen-evolution reaction by shrinking Pt shells in Pt-Pd-graphene stack structures. <b>2014</b> , 53, 12120-4		380
1701	FeP nanoparticles grown on graphene sheets as highly active non-precious-metal electrocatalysts for hydrogen evolution reaction. <b>2014</b> , 50, 11554-7		175
1700	Semiconductor heterojunction photocatalysts: design, construction, and photocatalytic performances. <b>2014</b> , 43, 5234-44		2515
1699	Toward design of synergistically active carbon-based catalysts for electrocatalytic hydrogen evolution. <b>2014</b> , 8, 5290-6		802
1698	Cobalt Sulfide Nanosheet/Graphene/Carbon Nanotube Nanocomposites as Flexible Electrodes for Hydrogen Evolution. <b>2014</b> , 126, 12802-12807		149
1697	Surface Polarization Matters: Enhancing the Hydrogen-Evolution Reaction by Shrinking Pt Shells in PtPd/graphene Stack Structures. <b>2014</b> , 126, 12316-12320		45
1696	Construction of Efficient 3D Gas Evolution Electrocatalyst for Hydrogen Evolution: Porous FeP Nanowire Arrays on Graphene Sheets. <b>2015</b> , 2, 1500120		139

1695	Intercorrelated Superhybrid of AgBr Supported on Graphitic-C <sub>3</sub> N <sub>4</sub> -Decorated Nitrogen-Doped Graphene: High Engineering Photocatalytic Activities for Water Purification and CO <sub>2</sub> Reduction. <b>2015</b> , 27, 6906-13	249
1694	Co(OH) <sub>2</sub> @PANI Hybrid Nanosheets with 3D Networks as High-Performance Electrocatalysts for Hydrogen Evolution Reaction. <b>2015</b> , 27, 7051-7	250
1693	Shi Zhang Qiao. <b>2015</b> , 127, 4502-4502	0
1692	Hierarchical [Mo <sub>2</sub> C] Nanotubes Organized by Ultrathin Nanosheets as a Highly Efficient Electrocatalyst for Hydrogen Production. <b>2015</b> , 127, 15615-15619	105
1691	Porous Molybdenum-Based Hybrid Catalysts for Highly Efficient Hydrogen Evolution. <b>2015</b> , 54, 12928-32	321
1690	Nanoporous Graphene with Single-Atom Nickel Dopants: An Efficient and Stable Catalyst for Electrochemical Hydrogen Production. <b>2015</b> , 54, 14031-5	480
1689	3D WS <sub>2</sub> Nanolayers@Heteroatom-Doped Graphene Films as Hydrogen Evolution Catalyst Electrodes. <b>2015</b> , 27, 4234-41	350
1688	Dimeric [Mo <sub>2</sub> S <sub>12</sub> ] <sup>2-</sup> Cluster: A Molecular Analogue of MoS <sub>2</sub> Edges for Superior Hydrogen-Evolution Electrocatalysis. <b>2015</b> , 127, 15396-15400	30
1687	Hierarchical Transition-Metal Dichalcogenide Nanosheets for Enhanced Electrocatalytic Hydrogen Evolution. <b>2015</b> , 27, 7426-31	113
1686	Shi Zhang Qiao. <b>2015</b> , 54, 4426	
1685	Coupling Mo <sub>2</sub> C with Nitrogen-Rich Nanocarbon Leads to Efficient Hydrogen-Evolution Electrocatalytic Sites. <b>2015</b> , 54, 10752-7	589
1684	Defect-Rich CoP/Nitrogen-Doped Carbon Composites Derived from a Metal-Organic Framework: High-Performance Electrocatalysts for the Hydrogen Evolution Reaction. <b>2015</b> , 7, 1920-1925	76
1683	Macroscopic 3D Porous Graphitic Carbon Nitride Monolith for Enhanced Photocatalytic Hydrogen Evolution. <b>2015</b> , 27, 4634-9	457
1682	The Complex Role of Carbon Nitride as a Sensitizer in Photoelectrochemical Cells. <b>2015</b> , 3, 1052-1058	35
1681	Combinatorial Search for High-Activity Hydrogen Catalysts Based on Transition-Metal-Embedded Graphitic Carbons. <b>2015</b> , 5, 1501423	51
1680	Nanoporous Graphene with Single-Atom Nickel Dopants: An Efficient and Stable Catalyst for Electrochemical Hydrogen Production. <b>2015</b> , 127, 14237-14241	69
1679	Hierarchical [Mo <sub>2</sub> C] Nanotubes Organized by Ultrathin Nanosheets as a Highly Efficient Electrocatalyst for Hydrogen Production. <b>2015</b> , 54, 15395-9	485
1678	Supramolecular Chemistry in Molten Sulfur: Preorganization Effects Leading to Marked Enhancement of Carbon Nitride Photoelectrochemistry. <b>2015</b> , 25, 6265-6271	74

- 1677 Coupling Mo<sub>2</sub>C with Nitrogen-Rich Nanocarbon Leads to Efficient Hydrogen-Evolution Electrocatalytic Sites. **2015**, 127, 10902-10907 115
- 1676 Structural Engineering of Electrocatalysts for the Hydrogen Evolution Reaction: Order or Disorder?. **2015**, 7, 2568-2580 121
- 1675 A Flexible Electrode Based on Iron Phosphide Nanotubes for Overall Water Splitting. **2015**, 21, 18062-7 198
- 1674 Metal-Free Carbonaceous Materials as Promising Heterogeneous Catalysts. **2015**, 7, 2765-2787 98
- 1673 Nitrogen- and Phosphorus-Doped Nanoporous Graphene/Graphitic Carbon Nitride Hybrids as Efficient Electrocatalysts for Hydrogen Evolution. **2015**, 7, 3873-3880 78
- 1672 Engineering of Carbon-Based Electrocatalysts for Emerging Energy Conversion: From Fundamentality to Functionality. **2015**, 27, 5372-8 216
- 1671 Porous Molybdenum-Based Hybrid Catalysts for Highly Efficient Hydrogen Evolution. **2015**, 127, 13120-13124 51
- 1670 Dimeric [Mo<sub>2</sub>S<sub>12</sub>]<sup>(2-)</sup> Cluster: A Molecular Analogue of MoS<sub>2</sub> Edges for Superior Hydrogen-Evolution Electrocatalysis. **2015**, 54, 15181-5 128
- 1669 Carbon- and Nitrogen-Based Organic Frameworks. **2015**, 48, 1591-600 182
- 1668 Metallic WO<sub>2</sub>-Carbon Mesoporous Nanowires as Highly Efficient Electrocatalysts for Hydrogen Evolution Reaction. **2015**, 137, 6983-6 382
- 1667 NIR light induced H<sub>2</sub> evolution by a metal-free photocatalyst. **2015**, 51, 10899-902 95
- 1666 Synthesis of tungsten carbide and tungsten disulfide on vertically aligned multi-walled carbon nanotube forests and their application as non-Pt electrocatalysts for the hydrogen evolution reaction. **2015**, 3, 14609-14616 51
- 1665 Metal-organic frameworks derived Co<sub>x</sub>Fe<sub>1-x</sub>P nanocubes for electrochemical hydrogen evolution. **2015**, 7, 11055-62 175
- 1664 Novel Co/Ni/graphene composite electrodes for hydrogen production. **2015**, 5, 47398-47407 40
- 1663 Hierarchically Porous Ni<sub>3</sub>S<sub>2</sub> Nanorod Array Foam as Highly Efficient Electrocatalyst for Hydrogen Evolution Reaction and Oxygen Evolution Reaction. **2015**, 174, 297-301 250
- 1662 Constructing holey graphene monoliths via supramolecular assembly: Enriching nitrogen heteroatoms up to the theoretical limit for hydrogen evolution reaction. **2015**, 15, 567-575 51
- 1661 Sulfur-doped graphene as a catalyst support: Influences of carbon black and ruthenium nanoparticles on the hydrogen evolution reaction performance. **2015**, 93, 762-773 56
- 1660 Graphitic Carbon Nitride/Graphene Hybrids as New Active Materials for Energy Conversion and Storage. **2015**, 1, 298-318 90

1659	Ultrafine Metal Phosphide Nanocrystals in Situ Decorated on Highly Porous Heteroatom-Doped Carbons for Active Electrocatalytic Hydrogen Evolution. <b>2015</b> , 7, 28369-76	59
1658	Photocatalysis fundamentals and surface modification of TiO <sub>2</sub> nanomaterials. <b>2015</b> , 36, 2049-2070	383
1657	Porous C <sub>3</sub> N <sub>4</sub> nanolayers@N-graphene films as catalyst electrodes for highly efficient hydrogen evolution. <b>2015</b> , 9, 931-40	569
1656	Correlating hydrogen oxidation and evolution activity on platinum at different pH with measured hydrogen binding energy. <i>Nature Communications</i> , <b>2015</b> , 6, 5848	17.4 556
1655	Elektrochemie der Wasserstoffentwicklungsreaktion: Optimierung durch Korrelation von Experiment und Theorie. <b>2015</b> , 127, 52-66	137
1654	Hydrogen production on a hybrid photocatalytic system composed of ultrathin CdS nanosheets and a molecular nickel complex. <b>2015</b> , 21, 4571-5	55
1653	Single-shell carbon-encapsulated iron nanoparticles: synthesis and high electrocatalytic activity for hydrogen evolution reaction. <b>2015</b> , 54, 4535-8	238
1652	Design of electrocatalysts for oxygen- and hydrogen-involving energy conversion reactions. <b>2015</b> , 44, 2060-86	3275
1651	Bacteriorhodopsin/Ag nanoparticle-based hybrid nano-bio electrocatalyst for efficient and robust H <sub>2</sub> evolution from water. <b>2015</b> , 137, 2840-3	50
1650	Nanoarray based superaerophobic surfaces for gas evolution reaction electrodes. <b>2015</b> , 2, 294-298	111
1649	In situ cobalt-cobalt oxide/N-doped carbon hybrids as superior bifunctional electrocatalysts for hydrogen and oxygen evolution. <b>2015</b> , 137, 2688-94	1328
1648	Self-standing non-noble metal (NiFe) oxide nanotube array anode catalysts with synergistic reactivity for high-performance water oxidation. <b>2015</b> , 3, 7179-7186	81
1647	Novel Molybdenum Carbide/Tungsten Carbide Composite Nanowires and Their Electrochemical Activation for Efficient and Stable Hydrogen Evolution. <b>2015</b> , 25, 1520-1526	275
1646	Photochemical and electrocatalytic water oxidation activity of cobalt carbodiimide. <b>2015</b> , 3, 5072-5082	58
1645	N-doped graphene quantum sheets on silicon nanowire photocathodes for hydrogen production. <b>2015</b> , 8, 1329-1338	113
1644	Ni <sub>2</sub> P nanosheets/Ni foam composite electrode for long-lived and pH-tolerable electrochemical hydrogen generation. <b>2015</b> , 7, 2376-84	195
1643	A comparative investigation on the effects of nitrogen-doping into graphene on enhancing the electrochemical performance of SnO <sub>2</sub> /graphene for sodium-ion batteries. <b>2015</b> , 7, 3164-72	113
1642	Scalable template synthesis of resorcinol-formaldehyde/graphene oxide composite aerogels with tunable densities and mechanical properties. <b>2015</b> , 54, 2397-401	137

1641	Scalable Template Synthesis of Resorcinol/Formaldehyde/Graphene Oxide Composite Aerogels with Tunable Densities and Mechanical Properties. <b>2015</b> , 127, 2427-2431	26
1640	Carbon nitride in energy conversion and storage: recent advances and future prospects. <b>2015</b> , 8, 931-46	158
1639	Single-Shell Carbon-Encapsulated Iron Nanoparticles: Synthesis and High Electrocatalytic Activity for Hydrogen Evolution Reaction. <b>2015</b> , 127, 4618-4621	54
1638	A high-performance metal-free hydrogen-evolution reaction electrocatalyst from bacterium derived carbon. <b>2015</b> , 3, 7210-7214	63
1637	Two-dimensional covalent carbon nitride nanosheets: synthesis, functionalization, and applications. <b>2015</b> , 8, 3092-3108	769
1636	Enhanced photocatalytic H <sub>2</sub> evolution over noble-metal-free NiS cocatalyst modified CdS nanorods/g-C <sub>3</sub> N <sub>4</sub> heterojunctions. <b>2015</b> , 3, 18244-18255	265
1635	In Situ Self-Sacrificed Template Synthesis of Fe-N/G Catalysts for Enhanced Oxygen Reduction. <b>2015</b> , 7, 18170-8	46
1634	Cobalt selenide: a versatile cocatalyst for photocatalytic water oxidation with visible light. <b>2015</b> , 3, 17946-17950	50
1633	A first-principles examination of conducting monolayer 1T'-MX <sub>2</sub> (M = Mo, W; X = S, Se, Te): promising catalysts for hydrogen evolution reaction and its enhancement by strain. <b>2015</b> , 17, 21702-8	95
1632	Nickel phosphide nanoparticles-nitrogen-doped graphene hybrid as an efficient catalyst for enhanced hydrogen evolution activity. <b>2015</b> , 297, 45-52	136
1631	Heteroatom-Doped Graphene-Based Materials for Energy-Relevant Electrocatalytic Processes. <b>2015</b> , 5, 5207-5234	675
1630	Porous Two-Dimensional Nanosheets Converted from Layered Double Hydroxides and Their Applications in Electrocatalytic Water Splitting. <b>2015</b> , 27, 5702-5711	237
1629	Graphitic carbon nitride nanosheet-assisted preparation of N-enriched mesoporous carbon nanofibers with improved capacitive performance. <b>2015</b> , 94, 342-348	58
1628	Graphene-like two-dimensional layered nanomaterials: applications in biosensors and nanomedicine. <b>2015</b> , 7, 14217-31	180
1627	Growth of molybdenum carbide micro-islands on carbon cloth toward binder-free cathodes for efficient hydrogen evolution reaction. <b>2015</b> , 3, 16320-16326	80
1626	One-step preparation of nickel sulfide/nickel hydroxide films for electrocatalytic hydrogen generation from water. <b>2015</b> , 5, 60674-60680	15
1625	MOF-derived surface modified Ni nanoparticles as an efficient catalyst for the hydrogen evolution reaction. <b>2015</b> , 3, 16435-16439	120
1624	One-step hydrothermal synthesis of few-layered and edge-abundant MoS <sub>2</sub> /C nanocomposites with enhanced electrocatalytic performance for hydrogen evolution reaction. <b>2015</b> , 26, 1273-1280	9

1623	Synergetic effect of metal nickel and graphene as a cocatalyst for enhanced photocatalytic hydrogen evolution via dye sensitization. <b>2015</b> , 5, 10589	66
1622	Sulfur and nitrogen self-doped carbon nanosheets derived from peanut root nodules as high-efficiency non-metal electrocatalyst for hydrogen evolution reaction. <b>2015</b> , 16, 357-366	125
1621	Poly(3,4-dinitrothiophene)/SWCNT composite as a low overpotential hydrogen evolution metal-free catalyst. <b>2015</b> , 3, 78-82	21
1620	Highly efficient hydrogen evolution catalysis by MoS <sub>2</sub> /MoN/carbonitride composites derived from tetrathiomolybdate/polymer hybrids. <b>2015</b> , 134, 572-580	28
1619	Enhanced hydrogen evolution reaction on few-layer MoS <sub>2</sub> nanosheets-coated functionalized carbon nanotubes. <b>2015</b> , 40, 8877-8888	100
1618	The atomistic origin of the extraordinary oxygen reduction activity of PtNi fuel cell catalysts. <b>2015</b> , 6, 3915-3925	47
1617	Layered titanium diboride: towards exfoliation and electrochemical applications. <b>2015</b> , 7, 12527-34	25
1616	Interconnected Co-Entrapped, N-Doped Carbon Nanotube Film as Active Hydrogen Evolution Cathode over the Whole pH Range. <b>2015</b> , 8, 1850-5	67
1615	Spontaneous formation of Cu <sub>2</sub> O-g-C <sub>3</sub> N <sub>4</sub> core-shell nanowires for photocurrent and humidity responses. <b>2015</b> , 7, 9694-702	44
1614	Noble metal-free hydrogen evolution catalysts for water splitting. <b>2015</b> , 44, 5148-80	3702
1613	Highly dual-doped multilayer nanoporous graphene: efficient metal-free electrocatalysts for the hydrogen evolution reaction. <b>2015</b> , 3, 12642-12645	67
1612	Highly porous non-precious bimetallic electrocatalysts for efficient hydrogen evolution. <i>Nature Communications</i> , <b>2015</b> , 6, 6567	17.4 359
1611	Gelatin-derived sustainable carbon-based functional materials for energy conversion and storage with controllability of structure and component. <b>2015</b> , 1, e140035	130
1610	Nitrogen and sulfur co-doped porous carbon derived from human hair as highly efficient metal-free electrocatalysts for hydrogen evolution reactions. <b>2015</b> , 3, 8840-8846	107
1609	Facile Synthesis of In Situ Nitrogenated Graphene Decorated by Few-Layer MoS <sub>2</sub> for Hydrogen Evolution Reaction. <b>2015</b> , 171, 72-80	44
1608	Electrocatalytic hydrogen evolution using graphitic carbon nitride coupled with nanoporous graphene co-doped by S and Se. <b>2015</b> , 3, 12810-12819	91
1607	A New Core/Shell NiAu/Au Nanoparticle Catalyst with Pt-like Activity for Hydrogen Evolution Reaction. <b>2015</b> , 137, 5859-62	229
1606	Metal-free catalysts for oxygen reduction reaction. <b>2015</b> , 115, 4823-92	1763

1605	From Waste to gold—a one-pot method to synthesize ultrafinely dispersed Fe <sub>2</sub> O <sub>3</sub> -based nanoparticles on N-doped carbon for synergistic and efficient water splitting. <b>2015</b> , 3, 11756-11761	48
1604	Cobalt nanoparticles embedded in nitrogen-doped carbon for the hydrogen evolution reaction. <b>2015</b> , 7, 8083-7	158
1603	Enhanced photocatalytic activity and charge carrier dynamics of hetero-structured organic-inorganic nano-photocatalysts. <b>2015</b> , 7, 7970-8	17
1602	Synthesis of nanostructured clean surface molybdenum carbides on graphene sheets as efficient and stable hydrogen evolution reaction catalysts. <b>2015</b> , 51, 8323-5	121
1601	Modification Strategies with Inorganic Acids for Efficient Photocatalysts by Promoting the Adsorption of O <sub>2</sub> . <b>2015</b> , 7, 22727-40	56
1600	Theoretical Insight into the Hydrogen Evolution Activity of Open-Ended Carbon Nanotubes. <b>2015</b> , 6, 3956-60	25
1599	Metal-free graphitic carbon nitride as mechano-catalyst for hydrogen evolution reaction. <b>2015</b> , 332, 149-155	106
1598	Hierarchical composite structure of few-layers MoS <sub>2</sub> nanosheets supported by vertical graphene on carbon cloth for high-performance hydrogen evolution reaction. <b>2015</b> , 18, 196-204	163
1597	Heteroatom-Doped Graphitic Carbon Catalysts for Efficient Electrocatalysis of Oxygen Reduction Reaction. <b>2015</b> , 5, 7244-7253	422
1596	Rising Again: Opportunities and Challenges for Platinum-Free Electrocatalysts. <b>2015</b> , 27, 7218-7235	97
1595	Nanoparticle Superlattices as Efficient Bifunctional Electrocatalysts for Water Splitting. <b>2015</b> , 137, 14305-12	328
1594	Effect of activated carbon surface functional groups on nano-lead electrodeposition and hydrogen evolution and its applications in lead-carbon batteries. <b>2015</b> , 186, 654-663	50
1593	High-Performance Overall Water Splitting Electrocatalysts Derived from Cobalt-Based Metal-Organic Frameworks. <b>2015</b> , 27, 7636-7642	486
1592	Non-precious alloy encapsulated in nitrogen-doped graphene layers derived from MOFs as an active and durable hydrogen evolution reaction catalyst. <b>2015</b> , 8, 3563-3571	419
1591	Carbon nanodot decorated graphitic carbon nitride: new insights into the enhanced photocatalytic water splitting from ab initio studies. <b>2015</b> , 17, 31140-4	90
1590	Three-Dimensional Heterostructures of MoS <sub>2</sub> Nanosheets on Conducting MoO <sub>2</sub> as an Efficient Electrocatalyst To Enhance Hydrogen Evolution Reaction. <b>2015</b> , 7, 23328-35	103
1589	Solar-induced photoelectrochemical sensing for dopamine based on TiO <sub>2</sub> nanoparticles on g-C <sub>3</sub> N <sub>4</sub> decorated graphene nanosheets. <b>2015</b> , 759, 32-37	32
1588	Carbon-based electrocatalysts for advanced energy conversion and storage. <b>2015</b> , 1, e1500564	434



1587	Hierarchical Ni-Mo-S nanosheets on carbon fiber cloth: A flexible electrode for efficient hydrogen generation in neutral electrolyte. <b>2015</b> , 1, e1500259		356
1586	Efficient Electrochemical Reduction of Carbon Dioxide to Acetate on Nitrogen-Doped Nanodiamond. <b>2015</b> , 137, 11631-6		339
1585	Local atomic structure modulations activate metal oxide as electrocatalyst for hydrogen evolution in acidic water. <i>Nature Communications</i> , <b>2015</b> , 6, 8064	17.4	214
1584	Molecular metal-N <sub>x</sub> centres in porous carbon for electrocatalytic hydrogen evolution. <i>Nature Communications</i> , <b>2015</b> , 6, 7992	17.4	467
1583	Oxygen Evolution Catalyzed by Nickel-Iron Oxide Nanocrystals with a Nonequilibrium Phase. <b>2015</b> , 7, 19755-63		41
1582	Graphitic-carbon nitride support for the synthesis of shape-dependent ZnO and their application in visible light photocatalysts. <b>2015</b> , 5, 80397-80409		42
1581	A novel two-dimensional material B <sub>2</sub> S <sub>3</sub> and its structural implication to new carbon and boron nitride allotropes. <b>2015</b> , 3, 9921-9927		10
1580	Enhanced visible-light H <sub>2</sub> evolution of g-C <sub>3</sub> N <sub>4</sub> photocatalysts via the synergetic effect of amorphous NiS and cheap metal-free carbon black nanoparticles as co-catalysts. <b>2015</b> , 358, 204-212		176
1579	Polybenzimidazole and polybenzimidazole/MoS <sub>2</sub> hybrids as an active nitrogen sites: hydrogen generation application. <b>2015</b> , 5, 100996-101005		8
1578	Nanostructured Electrocatalysts for PEM Fuel Cells and Redox Flow Batteries: A Selected Review. <b>2015</b> , 5, 7288-7298		68
1577	C and N Hybrid Coordination Derived Co-C-N Complex as a Highly Efficient Electrocatalyst for Hydrogen Evolution Reaction. <b>2015</b> , 137, 15070-3		315
1576	Microcontact-printing-assisted access of graphitic carbon nitride films with favorable textures toward photoelectrochemical application. <b>2015</b> , 27, 712-8		151
1575	An Advanced Nitrogen-Doped Graphene/Cobalt-Embedded Porous Carbon Polyhedron Hybrid for Efficient Catalysis of Oxygen Reduction and Water Splitting. <b>2015</b> , 25, 872-882		612
1574	High catalytic activity of nitrogen and sulfur co-doped nanoporous graphene in the hydrogen evolution reaction. <b>2015</b> , 54, 2131-6		641
1573	Hybrid C <sub>3</sub> N <sub>4</sub> /Fluorine-Doped Tin Oxide Electrode Transfers Hydride for 1,4-NADH Cofactor Regeneration. <b>2015</b> , 2, 333-337		13
1572	Monodisperse Pt atoms anchored on N-doped graphene as efficient catalysts for CO oxidation: a first-principles investigation. <b>2015</b> , 5, 1658-1667		69
1571	Engineering heterogeneous semiconductors for solar water splitting. <b>2015</b> , 3, 2485-2534		1271
1570	Micelle-template synthesis of nitrogen-doped mesoporous graphene as an efficient metal-free electrocatalyst for hydrogen production. <b>2014</b> , 4, 7557		77

1569	High Catalytic Activity of Nitrogen and Sulfur Co-Doped Nanoporous Graphene in the Hydrogen Evolution Reaction. <b>2015</b> , 127, 2159-2164	118
1568	Advancing the electrochemistry of the hydrogen-evolution reaction through combining experiment and theory. <b>2015</b> , 54, 52-65	1282
1567	Molybdenum sulfide clusters-nitrogen-doped graphene hybrid hydrogel film as an efficient three-dimensional hydrogen evolution electrocatalyst. <b>2015</b> , 11, 11-18	209
1566	Integrated inorganic membrane electrode assembly with layered double hydroxides as ionic conductors for anion exchange membrane water electrolysis. <b>2015</b> , 11, 110-118	45
1565	Electrocatalytic H <sub>2</sub> production from seawater over Co, N-codoped nanocarbons. <b>2015</b> , 7, 2306-16	131
1564	Highly Selective and Stable Reduction of CO <sub>2</sub> to CO by a Graphitic Carbon Nitride/Carbon Nanotube Composite Electrocatalyst. <b>2016</b> , 22, 11991-6	104
1563	Metal-Carbon Hybrid Electrocatalysts Derived from Ion-Exchange Resin Containing Heavy Metals for Efficient Hydrogen Evolution Reaction. <b>2016</b> , 12, 2768-74	28
1562	Sulfur and Nitrogen Codoped Carbon Tubes as Bifunctional Metal-Free Electrocatalysts for Oxygen Reduction and Hydrogen Evolution in Acidic Media. <b>2016</b> , 22, 10326-9	49
1561	A Perovskite Electrocatalyst for Efficient Hydrogen Evolution Reaction. <b>2016</b> , 28, 6442-8	315
1560	Molybdenum Disulfide/Nitrogen-Doped Reduced Graphene Oxide Nanocomposite with Enlarged Interlayer Spacing for Electrocatalytic Hydrogen Evolution. <b>2016</b> , 6, 1600116	342
1559	N,P-Codoped Carbon Networks as Efficient Metal-free Bifunctional Catalysts for Oxygen Reduction and Hydrogen Evolution Reactions. <b>2016</b> , 55, 2230-4	638
1558	Microwave Synthesized Three-dimensional Hierarchical Nanostructure CoS <sub>2</sub> /MoS <sub>2</sub> Growth on Carbon Fiber Cloth: A Bifunctional Electrode for Hydrogen Evolution Reaction and Supercapacitor. <b>2016</b> , 212, 941-949	79
1557	Graphitic C <sub>3</sub> N <sub>4</sub> as a powerful catalyst for all-vanadium redox flow batteries. <b>2016</b> , 6, 66368-66372	23
1556	Significant Enhancement of Water Splitting Activity of N-Carbon Electrocatalyst by Trace Level Co Doping. <b>2016</b> , 12, 3703-11	93
1555	Toward enhanced activity of a graphitic carbon nitride-based electrocatalyst in oxygen reduction and hydrogen evolution reactions via atomic sulfur doping. <b>2016</b> , 4, 12205-12211	92
1554	Chalcogenide and Phosphide Solid-State Electrocatalysts for Hydrogen Generation. <b>2016</b> , 81, 1045-1055	53
1553	Palladium on Nitrogen-Doped Mesoporous Carbon: A Bifunctional Catalyst for Formate-Based, Carbon-Neutral Hydrogen Storage. <b>2016</b> , 9, 246-51	72
1552	3D Nanoporous Metal Phosphides toward High-Efficiency Electrochemical Hydrogen Production. <b>2016</b> , 28, 2951-5	137

1551	Searching for Highly Active Catalysts for Hydrogen Evolution Reaction Based on O-Terminated MXenes through a Simple Descriptor. <b>2016</b> , 28, 9026-9032	165
1550	Platinum single-atom and cluster catalysis of the hydrogen evolution reaction. <i>Nature Communications</i> , <b>2016</b> , 7, 13638	17.4 1085
1549	Ruthenium decorated carbon nanoink as highly active electrocatalyst in hydrogen evolution reaction. <b>2016</b> , 41, 23007-23014	13
1548	Hydrogen generation from pure water using Al-Sn powders consolidated through high-pressure torsion. <b>2016</b> , 31, 775-782	13
1547	Hydrothermally Driven Transformation of Oxygen Functional Groups at Multiwall Carbon Nanotubes for Improved Electrocatalytic Applications. <b>2016</b> , 8, 35513-35522	44
1546	Dual-valence nickel nanosheets covered with thin carbon as bifunctional electrocatalysts for full water splitting. <b>2016</b> , 4, 7297-7304	57
1545	Nitrogen doped Graphene Oxides as an efficient electrocatalyst for the Hydrogen evolution Reaction; Composition based Electrode Investigation. <b>2016</b> , 200, 53-58	14
1544	Fiber-based multifunctional nickel phosphide electrodes for flexible energy conversion and storage. <b>2016</b> , 4, 9691-9699	116
1543	Graphene and its electrochemistry - an update. <b>2016</b> , 45, 2458-93	289
1542	Catalysis with two-dimensional materials and their heterostructures. <b>2016</b> , 11, 218-30	1433
1541	CoP <sub>2</sub> nanoparticles on reduced graphene oxide sheets as a super-efficient bifunctional electrocatalyst for full water splitting. <b>2016</b> , 4, 4686-4690	195
1540	Template-directed approach to two-dimensional molybdenum phosphide-carbon nanocomposites with high catalytic activities in the hydrogen evolution reaction. <b>2016</b> , 40, 6015-6021	20
1539	General Formation of M-MoS <sub>3</sub> (M = Co, Ni) Hollow Structures with Enhanced Electrocatalytic Activity for Hydrogen Evolution. <b>2016</b> , 28, 92-7	328
1538	Ni <sub>3</sub> Se <sub>2</sub> nanoforest/Ni foam as a hydrophilic, metallic, and self-supported bifunctional electrocatalyst for both H <sub>2</sub> and O <sub>2</sub> generations. <b>2016</b> , 24, 103-110	297
1537	Rational design of graphitic carbon based nanostructures for advanced electrocatalysis. <b>2016</b> , 4, 8497-8511	66
1536	Metal-free carbonaceous electrocatalysts and photocatalysts for water splitting. <b>2016</b> , 45, 3039-52	419
1535	Vanadium nanobelts coated nickel foam 3D bifunctional electrode with excellent catalytic activity and stability for water electrolysis. <b>2016</b> , 8, 10731-8	62
1534	First-Principle Framework for Total Charging Energies in Electrocatalytic Materials and Charge-Responsive Molecular Binding at Gas-Surface Interfaces. <b>2016</b> , 8, 10897-903	16

1533	Hierarchical MoS <sub>2</sub> @MoP core-shell heterojunction electrocatalysts for efficient hydrogen evolution reaction over a broad pH range. <b>2016</b> , 8, 11052-9	134
1532	Hydrogen and CO <sub>2</sub> Reduction Reactions: Mechanisms and Catalysts. <b>2016</b> , 105-160	8
1531	Single Atom (Pd/Pt) Supported on Graphitic Carbon Nitride as an Efficient Photocatalyst for Visible-Light Reduction of Carbon Dioxide. <b>2016</b> , 138, 6292-7	735
1530	Hydrogen Production with a Simple and Scalable Membraneless Electrolyzer. <b>2016</b> , 163, F3012-F3019	38
1529	Co-, N-, and S-Tridoped Carbon Derived from Nitrogen- and Sulfur-Enriched Polymer and Cobalt Salt for Hydrogen Evolution Reaction. <b>2016</b> , 8, 13341-7	37
1528	Electrocatalysts for hydrogen oxidation and evolution reactions. <b>2016</b> , 59, 217-238	116
1527	Pd Supported on Carbon Nitride Boosts the Direct Hydrogen Peroxide Synthesis. <b>2016</b> , 6, 6959-6966	72
1526	Kinetically Enhanced Electrochemical Redox of Polysulfides on Polymeric Carbon Nitrides for Improved Lithium-Sulfur Batteries. <b>2016</b> , 8, 25193-201	123
1525	A cobalt-based hybrid electrocatalyst derived from a carbon nanotube inserted metal-organic framework for efficient water-splitting. <b>2016</b> , 4, 16057-16063	116
1524	A Microfiltration Polymer-Based Hollow-Fiber Cathode as a Promising Advanced Material for Simultaneous Recovery of Energy and Water. <b>2016</b> , 28, 9504-9511	25
1523	Metal-organic-framework-derived bi-metallic sulfide on N, S-codoped porous carbon nanocomposites as multifunctional electrocatalysts. <b>2016</b> , 334, 112-119	57
1522	Kohlenstoffbasierte Metallfreie Katalysatoren für die Elektrokatalyse jenseits der ORR. <b>2016</b> , 128, 11910-11933	47
1521	In situ growth of WO <sub>3</sub> nanowires on g-C <sub>3</sub> N <sub>4</sub> nanosheets: 1D/2D heterostructures with enhanced photocatalytic activity. <b>2016</b> , 18, 8406-8410	42
1520	A Highly Efficient and Self-Stabilizing Metallic-Glass Catalyst for Electrochemical Hydrogen Generation. <b>2016</b> , 28, 10293-10297	131
1519	Ni <sub>2</sub> P@CoP hybrid nanosheet arrays supported on carbon cloth as an efficient flexible cathode for hydrogen evolution. <b>2016</b> , 4, 16992-16999	122
1518	Correlation between Chemical Dopants and Topological Defects in Catalytically Active Nanoporous Graphene. <b>2016</b> , 28, 10644-10651	88
1517	Towards a comprehensive understanding of FeCo coated with N-doped carbon as a stable bi-functional catalyst in acidic media. <b>2016</b> , 8, e312-e312	72
1516	Driving electrocatalytic activity by interface electronic structure control in a metalloprotein hybrid catalyst for efficient hydrogen evolution. <b>2016</b> , 18, 23220-30	5

1515	Electrospun transition/alkaline earth metal oxide composite nanofibers under mild condition for hydrogen evolution reaction. <b>2016</b> , 41, 13915-13922	21
1514	Carbon-Coated Co(3+)-Rich Cobalt Selenide Derived from ZIF-67 for Efficient Electrochemical Water Oxidation. <b>2016</b> , 8, 20534-9	152
1513	2D nanosheets-based novel architectures: Synthesis, assembly and applications. <b>2016</b> , 11, 483-520	76
1512	Recent developments of carbon-based electrocatalysts for hydrogen evolution reaction. <b>2016</b> , 28, 29-43	473
1511	Electropolymerized supermolecule derived N, P co-doped carbon nanofiber networks as a highly efficient metal-free electrocatalyst for the hydrogen evolution reaction. <b>2016</b> , 4, 13726-13730	109
1510	Mo2C nanoparticles embedded within bacterial cellulose-derived 3D N-doped carbon nanofiber networks for efficient hydrogen evolution. <b>2016</b> , 8, e288-e288	127
1509	ZnS@g-C3N4 Composite Photocatalysts: In Situ Synthesis and Enhanced Visible-Light Photocatalytic Activity. <b>2016</b> , 146, 2185-2192	21
1508	Low-cost and highly efficient CoMoS4/NiMoS4-based electrocatalysts for hydrogen evolution reactions over a wide pH range. <b>2016</b> , 213, 236-243	63
1507	Controllable synthesis of molybdenum carbide nanoparticles embedded in porous graphitized carbon matrixes as efficient electrocatalyst for hydrogen evolution reaction. <b>2016</b> , 215, 357-365	37
1506	Multifunctional high-activity and robust electrocatalyst derived from metal-organic frameworks. <b>2016</b> , 4, 17288-17298	101
1505	Nitrogen-doped hollow carbon spheres with a wrinkled surface: their one-pot carbonization synthesis and supercapacitor properties. <b>2016</b> , 52, 11693-11696	71
1504	MOF-derived Co-doped nickel selenide/C electrocatalysts supported on Ni foam for overall water splitting. <b>2016</b> , 4, 15148-15155	236
1503	Valorization of coffee bean waste: a coffee bean waste derived multifunctional catalyst for photocatalytic hydrogen production and electrocatalytic oxygen reduction reactions. <b>2016</b> , 6, 82103-82111	14
1502	Cobalt nickel phosphide nanoparticles decorated carbon nanotubes as advanced hybrid catalysts for hydrogen evolution. <b>2016</b> , 4, 14675-14686	114
1501	Carbon dots with tunable concentrations of trapped anti-oxidant as an efficient metal-free catalyst for electrochemical water oxidation. <b>2016</b> , 4, 14614-14624	30
1500	Moving Graphitic Carbon Nitride from Electrocatalysis and Photocatalysis to a Potential Electrode Material for Photoelectric Devices. <b>2016</b> , 11, 2499-512	26
1499	Precise Formation of a Hollow Carbon Nitride Structure with a Janus Surface To Promote Water Splitting by Photoredox Catalysis. <b>2016</b> , 128, 11684-11688	54
1498	Precise Formation of a Hollow Carbon Nitride Structure with a Janus Surface To Promote Water Splitting by Photoredox Catalysis. <b>2016</b> , 55, 11512-6	382

1497	Lanthanides-based graphene catalysts for high performance hydrogen evolution and oxygen reduction. <b>2016</b> , 214, 173-181	16
1496	High Electrocatalytic Hydrogen Evolution Activity of an Anomalous Ruthenium Catalyst. <b>2016</b> , 138, 16174-16183	36
1495	Graphitic Carbon Nitride Film: An Emerging Star for Catalytic and Optoelectronic Applications. <b>2016</b> , 9, 2723-2735	62
1494	A highly active and durable CuPdPt/C electrocatalyst for an efficient hydrogen evolution reaction. <b>2016</b> , 4, 15309-15315	27
1493	p-Doped Graphene/Graphitic Carbon Nitride Hybrid Electrocatalysts: Unraveling Charge Transfer Mechanisms for Enhanced Hydrogen Evolution Reaction Performance. <b>2016</b> , 6, 7071-7077	53
1492	Metal link: A strategy to combine graphene and titanium dioxide for enhanced hydrogen production. <b>2016</b> , 41, 22034-22042	16
1491	Carbon Nitride Supramolecular Hybrid Material Enabled High-Efficiency Photocatalytic Water Treatments. <b>2016</b> , 16, 6568-6575	83
1490	Carbon-Based Metal-Free Catalysts for Electrocatalysis beyond the ORR. <b>2016</b> , 55, 11736-58	458
1489	Electrospun cobalt embedded porous nitrogen doped carbon nanofibers as an efficient catalyst for water splitting. <b>2016</b> , 4, 12818-12824	70
1488	Solution-processed MoS <sub>2</sub> nanotubes/reduced graphene oxide nanocomposite as an active electrocatalyst toward the hydrogen evolution reaction. <b>2016</b> , 6, 70740-70746	11
1487	In-Situ Platinum Deposition on Nitrogen-Doped Carbon Films as a Source of Catalytic Activity in a Hydrogen Evolution Reaction. <b>2016</b> , 8, 21531-8	45
1486	Homologous metal-free electrocatalysts grown on three-dimensional carbon networks for overall water splitting in acidic and alkaline media. <b>2016</b> , 4, 12878-12883	60
1485	In Situ Synthesis of Metal Sulfide Nanoparticles Based on 2D Metal-Organic Framework Nanosheets. <b>2016</b> , 12, 4669-74	88
1484	Activity origin and catalyst design principles for electrocatalytic hydrogen evolution on heteroatom-doped graphene. <b>2016</b> , 1,	703
1483	A review on noble-metal-free bifunctional heterogeneous catalysts for overall electrochemical water splitting. <b>2016</b> , 4, 17587-17603	740
1482	Advances and challenges in chemistry of two-dimensional nanosheets. <b>2016</b> , 11, 793-816	124
1481	Understanding the pseudocapacitance of RuO <sub>2</sub> from joint density functional theory. <b>2016</b> , 28, 464004	20
1480	Universal dependence of hydrogen oxidation and evolution reaction activity of platinum-group metals on pH and hydrogen binding energy. <b>2016</b> , 2, e1501602	396

1479	Gas Protection of Two-Dimensional Nanomaterials from High-Energy Impacts. <b>2016</b> , 6, 35532		39
1478	FeP embedded in N, P dual-doped porous carbon nanosheets: an efficient and durable bifunctional catalyst for oxygen reduction and evolution reactions. <b>2016</b> , 4, 18723-18729		108
1477	Carbon-based metal-free catalysts. <b>2016</b> , 1,		777
1476	Coupled molybdenum carbide and reduced graphene oxide electrocatalysts for efficient hydrogen evolution. <i>Nature Communications</i> , <b>2016</b> , 7, 11204	17.4	679
1475	Hydrogen evolution: Guiding principles. <b>2016</b> , 1,		44
1474	Nanoscale Electrocatalysis of Hydrazine Electro-Oxidation at Blistered Graphite Electrodes. <b>2016</b> , 8, 30458-30466		30
1473	A rhodium/silicon co-electrocatalyst design concept to surpass platinum hydrogen evolution activity at high overpotentials. <i>Nature Communications</i> , <b>2016</b> , 7, 12272	17.4	195
1472	Oxidation-Sulfidation Approach for Vertically Growing MoS <sub>2</sub> Nanofilms Catalysts on Molybdenum Foils as Efficient HER Catalysts. <b>2016</b> , 120, 25843-25850		36
1471	Graphene in Photocatalysis: A Review. <b>2016</b> , 12, 6640-6696		605
1470	111 oriented gold nanoplatelets on multilayer graphene as visible light photocatalyst for overall water splitting. <i>Nature Communications</i> , <b>2016</b> , 7, 11819	17.4	104
1469	In silico engineering of graphene-based van der Waals heterostructured nanohybrids for electronics and energy applications. <b>2016</b> , 6, 551-570		27
1468	Perovskite materials in energy storage and conversion. <b>2016</b> , 11, 338-369		59
1467	Monocrystalline Ni <sub>12</sub> P <sub>5</sub> hollow spheres with ultrahigh specific surface areas as advanced electrocatalysts for the hydrogen evolution reaction. <b>2016</b> , 4, 9755-9759		36
1466	Boosting oxygen reduction and hydrogen evolution at the edge sites of a web-like carbon nanotube-graphene hybrid. <b>2016</b> , 107, 739-746		22
1465	Mechanism of Hydrogen Evolution Reaction on 1T-MoS <sub>2</sub> from First Principles. <b>2016</b> , 6, 4953-4961		489
1464	Oxygenated monolayer carbon nitride for excellent photocatalytic hydrogen evolution and external quantum efficiency. <b>2016</b> , 27, 138-146		303
1463	Nanostructured catalysts for electrochemical water splitting: current state and prospects. <b>2016</b> , 4, 11973-12009		90
1462	Beyond Metal-Hydrides: Non-Transition-Metal and Metal-Free Ligand-Centered Electrocatalytic Hydrogen Evolution and Hydrogen Oxidation. <b>2016</b> , 138, 7844-7		72

1461	Nitrogen-doped graphene microtubes with opened inner voids: Highly efficient metal-free electrocatalysts for alkaline hydrogen evolution reaction. <b>2016</b> , 9, 2606-2615	76
1460	Universal Strategy to Fabricate a Two-Dimensional Layered Mesoporous Mo <sub>2</sub> C Electrocatalyst Hybridized on Graphene Sheets with High Activity and Durability for Hydrogen Generation. <b>2016</b> , 8, 18107-18	61
1459	2D-HfS <sub>2</sub> as an efficient photocatalyst for water splitting. <b>2016</b> , 6, 6605-6614	52
1458	Facile Synthesis of Graphene Sponge from Graphene Oxide for Efficient Dye-Sensitized H <sub>2</sub> Evolution. <b>2016</b> , 8, 15187-95	81
1457	Activated carbon becomes active for oxygen reduction and hydrogen evolution reactions. <b>2016</b> , 52, 8156-9	114
1456	Synthesis and development of nano WO <sub>3</sub> catalyst incorporated Ni <sub>2</sub> P coating for electrocatalytic hydrogen evolution reaction. <b>2016</b> , 41, 10090-10102	27
1455	Understanding divergent behaviors in the photocatalytic hydrogen evolution reaction on CdS and ZnS: a DFT based study. <b>2016</b> , 18, 16862-9	26
1454	Emerging new generation electrocatalysts for the oxygen reduction reaction. <b>2016</b> , 4, 11156-11178	143
1453	Strong interfacial coupling of MoS <sub>2</sub> /g-C <sub>3</sub> N <sub>4</sub> van de Waals solids for highly active water reduction. <b>2016</b> , 27, 44-50	81
1452	Phase separation synthesis of trinickel monophosphide porous hollow nanospheres for efficient hydrogen evolution. <b>2016</b> , 4, 10925-10932	53
1451	Cobalt-Doped FeSe <sub>2</sub> -RGO as Highly Active and Stable Electrocatalysts for Hydrogen Evolution Reactions. <b>2016</b> , 8, 18036-42	73
1450	2D Transition-Metal-Dichalcogenide-Nanosheet-Based Composites for Photocatalytic and Electrocatalytic Hydrogen Evolution Reactions. <b>2016</b> , 28, 1917-33	977
1449	Recent Advances in Inorganic Heterogeneous Electrocatalysts for Reduction of Carbon Dioxide. <b>2016</b> , 28, 3423-52	933
1448	Recent Advances in Breaking Scaling Relations for Effective Electrochemical Conversion of CO <sub>2</sub> . <b>2016</b> , 6, 1600463	234
1447	N,P-Codoped Carbon Networks as Efficient Metal-free Bifunctional Catalysts for Oxygen Reduction and Hydrogen Evolution Reactions. <b>2016</b> , 128, 2270-2274	185
1446	Integrated Three-Dimensional Carbon Paper/Carbon Tubes/Cobalt-Sulfide Sheets as an Efficient Electrode for Overall Water Splitting. <b>2016</b> , 10, 2342-8	471
1445	Unprecedented metal-free 3D porous carbonaceous electrodes for full water splitting. <b>2016</b> , 9, 1210-1214	237
1444	Overall water splitting by Pt/g-CN photocatalysts without using sacrificial agents. <b>2016</b> , 7, 3062-3066	689



1443	Iron triad (Fe, Co, Ni) ternary phosphide nanosheet arrays as high-performance bifunctional electrodes for full water splitting in basic and neutral conditions. <b>2016</b> , 6, 9647-9655	57
1442	FeP and FeP <sub>2</sub> nanowires for efficient electrocatalytic hydrogen evolution reaction. <b>2016</b> , 52, 2819-22	208
1441	Exploration of the electrochemical mechanism of ultrasmall multiple phases molybdenum carbides nanocrystals for hydrogen evolution reaction. <b>2016</b> , 6, 9240-9246	38
1440	Microbe-derived carbon materials for electrical energy storage and conversion. <b>2016</b> , 25, 191-198	37
1439	2D phosphorene as a water splitting photocatalyst: fundamentals to applications. <b>2016</b> , 9, 709-728	420
1438	Surface activated carbon nitride nanosheets with optimized electro-optical properties for highly efficient photocatalytic hydrogen production. <b>2016</b> , 4, 2445-2452	105
1437	Constructing a novel ternary Fe(III)/graphene/g-C <sub>3</sub> N <sub>4</sub> composite photocatalyst with enhanced visible-light driven photocatalytic activity via interfacial charge transfer effect. <b>2016</b> , 183, 231-241	241
1436	Recent development of carbon electrode materials and their bioanalytical and environmental applications. <b>2016</b> , 45, 715-52	205
1435	Enhanced photocatalytic performance of an Ag <sub>3</sub> PO <sub>4</sub> photocatalyst via fullerene modification: first-principles study. <b>2016</b> , 18, 2878-86	22
1434	Porous nanoMoC@graphite shell derived from a MOFs-directed strategy: an efficient electrocatalyst for the hydrogen evolution reaction. <b>2016</b> , 4, 6006-6013	158
1433	Heterogeneous Spin States in Ultrathin Nanosheets Induce Subtle Lattice Distortion To Trigger Efficient Hydrogen Evolution. <b>2016</b> , 138, 5087-92	277
1432	Composites of graphene-Mo <sub>2</sub> C rods: highly active and stable electrocatalyst for hydrogen evolution reaction. <b>2016</b> , 193, 268-274	65
1431	Merging Single-Atom-Dispersed Silver and Carbon Nitride to a Joint Electronic System via Copolymerization with Silver Tricyanomethanide. <b>2016</b> , 10, 3166-75	163
1430	Atomically isolated nickel species anchored on graphitized carbon for efficient hydrogen evolution electrocatalysis. <i>Nature Communications</i> , <b>2016</b> , 7, 10667	17.4 435
1429	Molybdenum sulfide/graphene-carbon nanotube nanocomposite material for electrocatalytic applications in hydrogen evolution reactions. <b>2016</b> , 9, 837-848	79
1428	Graphitic carbon nitride "reloaded": emerging applications beyond (photo)catalysis. <b>2016</b> , 45, 2308-26	595
1427	Quantum dots derived from two-dimensional materials and their applications for catalysis and energy. <b>2016</b> , 45, 2239-62	311
1426	Cobalt phosphide-based electrocatalysts: synthesis and phase catalytic activity comparison for hydrogen evolution. <b>2016</b> , 4, 4745-4754	224

1425	CoSe <sub>2</sub> and NiSe <sub>2</sub> Nanocrystals as Superior Bifunctional Catalysts for Electrochemical and Photoelectrochemical Water Splitting. <b>2016</b> , 8, 5327-34	334
1424	Ionic liquid functionalized carbon nanotubes: metal-free electrocatalyst for hydrogen evolution reaction. <b>2016</b> , 6, 12792-12796	15
1423	Design and Epitaxial Growth of MoSe <sub>2</sub> /NiSe Vertical Heteronanostructures with Electronic Modulation for Enhanced Hydrogen Evolution Reaction. <b>2016</b> , 28, 1838-1846	238
1422	Metallic Cobalt Encapsulated in Bamboo-Like and Nitrogen-Rich Carbonitride Nanotubes for Hydrogen Evolution Reaction. <b>2016</b> , 8, 6439-48	90
1421	N-doped graphitic carbon-incorporated g-C <sub>3</sub> N <sub>4</sub> for remarkably enhanced photocatalytic H <sub>2</sub> evolution under visible light. <b>2016</b> , 99, 111-117	263
1420	Biochemistry-inspired direct synthesis of nitrogen and phosphorus dual-doped microporous carbon spheres for enhanced electrocatalysis. <b>2016</b> , 52, 2118-21	51
1419	Carbon-coated MoS <sub>2</sub> nanosheets as highly efficient electrocatalysts for the hydrogen evolution reaction. <b>2016</b> , 27, 045402	29
1418	Ultrafine Cobalt Catalysts on Covalent Carbon Nitride Frameworks for Oxygenic Photosynthesis. <b>2016</b> , 8, 2287-96	93
1417	Self-supported electrocatalysts for advanced energy conversion processes. <b>2016</b> , 19, 265-273	212
1416	Recent advance in fabricating monolithic 3D porous graphene and their applications in biosensing and biofuel cells. <b>2017</b> , 89, 85-95	84
1415	A review on g-C <sub>3</sub> N <sub>4</sub> -based photocatalysts. <b>2017</b> , 391, 72-123	1687
1414	Double-Layer Graphene Outperforming Monolayer as Catalyst on Silicon Photocathode for Hydrogen Production. <b>2017</b> , 9, 3570-3580	15
1413	Fabricating the Robust g-C <sub>3</sub> N <sub>4</sub> Nanosheets/Carbons/NiS Multiple Heterojunctions for Enhanced Photocatalytic H <sub>2</sub> Generation: An Insight into the Trifunctional Roles of Nanocarbons. <b>2017</b> , 5, 2224-2236	180
1412	Replacing Oxygen Evolution with Hydrazine Oxidation at the Anode for Energy-Saving Electrolytic Hydrogen Production. <b>2017</b> , 4, 481-484	49
1411	Fe-Doped NiP Nanosheet Array for High-Efficiency Electrochemical Water Oxidation. <b>2017</b> , 56, 1041-1044	164
1410	Facile Synthesis of Vanadium-Doped NiS Nanowire Arrays as Active Electrocatalyst for Hydrogen Evolution Reaction. <b>2017</b> , 9, 5959-5967	138
1409	Graphene-coated hybrid electrocatalysts derived from bimetallic metal-organic frameworks for efficient hydrogen generation. <b>2017</b> , 5, 5000-5006	62
1408	The noble metal loading binary iron/zinc electrode for hydrogen production. <b>2017</b> , 42, 6455-6461	21

1407	Cobalt-nitrogen doped 3D porous carbon prepared with self-generated nanoparticles as sacrificial templates for hydrogen generation. <b>2017</b> , 42, 4193-4201	14
1406	High efficient solar hydrogen generation by modulation of Co-Ni sulfide (220) surface structure and adjusting adsorption hydrogen energy. <b>2017</b> , 206, 353-363	39
1405	Topotactic Conversion of $\beta$ -FeO Nanowires into FeP as a Superior Fluorosensor for Nucleic Acid Detection: Insights from Experiment and Theory. <b>2017</b> , 89, 2191-2195	34
1404	Preparation of NiCoP Hollow Quasi-Polyhedra and Their Electrocatalytic Properties for Hydrogen Evolution in Alkaline Solution. <b>2017</b> , 9, 5982-5991	162
1403	Metal organic framework derived NiFe@N-doped graphene microtube composites for hydrogen evolution catalyst. <b>2017</b> , 116, 68-76	62
1402	Energy efficient synthesis of highly ordered mesoporous carbon nitrides with uniform rods and their superior CO <sub>2</sub> adsorption capacity. <b>2017</b> , 5, 16220-16230	62
1401	Cracked monolayer 1T MoS <sub>2</sub> with abundant active sites for enhanced electrocatalytic hydrogen evolution. <b>2017</b> , 7, 718-724	60
1400	Recent Progress in Metal-Organic Frameworks for Applications in Electrocatalytic and Photocatalytic Water Splitting. <b>2017</b> , 4, 1600371	440
1399	Effect of Heat Treatment on the Nitrogen Content and Its Role on the Carbon Dioxide Adsorption Capacity of Highly Ordered Mesoporous Carbon Nitride. <b>2017</b> , 12, 595-604	13
1398	Electrochemical performance of $\beta$ -Mo <sub>2</sub> C as catalyst for the hydrogen evolution reaction. <b>2017</b> , 793, 235-241	17
1397	Sub-1.1 nm ultrathin porous CoP nanosheets with dominant reactive {200} facets: a high mass activity and efficient electrocatalyst for the hydrogen evolution reaction. <b>2017</b> , 8, 2769-2775	199
1396	Coupling multiphase-Fe and hierarchical N-doped graphitic carbon as trifunctional electrocatalysts by supramolecular preorganization of precursors. <b>2017</b> , 53, 2044-2047	42
1395	Advent of 2D Rhenium Disulfide (ReS <sub>2</sub> ): Fundamentals to Applications. <b>2017</b> , 27, 1606129	224
1394	Molecule-Level g-CN Coordinated Transition Metals as a New Class of Electrocatalysts for Oxygen Electrode Reactions. <b>2017</b> , 139, 3336-3339	816
1393	Hybrid metal-CuS nanostructures as efficient co-catalysts for photocatalytic hydrogen generation. <b>2017</b> , 53, 3277-3280	22
1392	Interface confined hydrogen evolution reaction in zero valent metal nanoparticles-intercalated molybdenum disulfide. <i>Nature Communications</i> , <b>2017</b> , 8, 14548	17.4 139
1391	Non-Noble Metal-based Carbon Composites in Hydrogen Evolution Reaction: Fundamentals to Applications. <b>2017</b> , 29, 1605838	900
1390	Hydrogen evolution electrocatalysis with binary-nonmetal transition metal compounds. <b>2017</b> , 5, 5995-6012	117

1389	Surface and Interface Engineering of Noble-Metal-Free Electrocatalysts for Efficient Energy Conversion Processes. <b>2017</b> , 50, 915-923	672
1388	Lateral topological crystalline insulator heterostructure. <b>2017</b> , 4, 025038	9
1387	NiS <sub>2</sub> nanosheet array: A high-active bifunctional electrocatalyst for hydrazine oxidation and water reduction toward energy-efficient hydrogen production. <b>2017</b> , 3, 9-14	47
1386	Graphene and Their Hybrid Electrocatalysts for Water Splitting. <b>2017</b> , 9, 1554-1568	58
1385	Sulfur-Modified Graphitic Carbon Nitride Nanostructures as an Efficient Electrocatalyst for Water Oxidation. <b>2017</b> , 13, 1603893	38
1384	C=C Bond Modified Graphitic Carbon Nitride Films for Enhanced Photoelectrochemical Cell Performance. <b>2017</b> , 12, 1005-1012	25
1383	Nanocomposites of CN with Layers of MoS and Nitrogenated RGO, Obtained by Covalent Cross-Linking: Synthesis, Characterization, and HER Activity. <b>2017</b> , 9, 10664-10672	95
1382	Al-Doped CoP nanoarray: a durable water-splitting electrocatalyst with superhigh activity. <b>2017</b> , 9, 4793-4800	200
1381	Mesh-on-Mesh Graphitic-C <sub>3</sub> N <sub>4</sub> @Graphene for Highly Efficient Hydrogen Evolution. <b>2017</b> , 27, 1606352	115
1380	Atomic Defects in Two-Dimensional Materials: From Single-Atom Spectroscopy to Functionalities in Opto-/Electronics, Nanomagnetism, and Catalysis. <b>2017</b> , 29, 1606434	146
1379	A molecular approach to an electrocatalytic hydrogen evolution reaction on single-layer graphene. <b>2017</b> , 9, 3969-3979	32
1378	Two-Dimensional (2D) Nanomaterials towards Electrochemical Nanoarchitectonics in Energy-Related Applications. <b>2017</b> , 90, 627-648	321
1377	Orientation controlled preparation of nanoporous carbon nitride fibers and related composite for gas sensing under ambient conditions. <b>2017</b> , 10, 1710-1719	26
1376	Cation modulating electrocatalyst derived from bimetallic metal-organic frameworks for overall water splitting. <b>2017</b> , 5, 6170-6177	38
1375	Pulse electrodeposited cathode catalyst layers for PEM fuel cells. <b>2017</b> , 42, 13649-13660	10
1374	Highly efficient hydrogen evolution from seawater by a low-cost and stable CoMoP@C electrocatalyst superior to Pt/C. <b>2017</b> , 10, 788-798	450
1373	Carbokatalyse in Flüssigphasenreaktionen. <b>2017</b> , 129, 956-985	30
1372	A host-guest approach to fabricate metallic cobalt nanoparticles embedded in silk-derived N-doped carbon fibers for efficient hydrogen evolution. <b>2017</b> , 2, 151-159	14

1371	Two in one: N-doped tubular carbon nanostructure as an efficient metal-free dual electrocatalyst for hydrogen evolution and oxygen reduction reactions. <b>2017</b> , 5, 6025-6031	55
1370	Nickel-Cobalt Diselenide 3D Mesoporous Nanosheet Networks Supported on Ni Foam: An All-pH Highly Efficient Integrated Electrocatalyst for Hydrogen Evolution. <b>2017</b> , 29, 1606521	301
1369	Dominating Role of Ni on the Interface of Ni/NiO for Enhanced Hydrogen Evolution Reaction. <b>2017</b> , 9, 7139-7147	139
1368	Fast Photoelectron Transfer in (C)-CN Plane Heterostructural Nanosheets for Overall Water Splitting. <b>2017</b> , 139, 3021-3026	473
1367	An efficient and pH-universal ruthenium-based catalyst for the hydrogen evolution reaction. <b>2017</b> , 12, 441-446	857
1366	Heteroatom-Doped Carbon Materials for Electrocatalysis. <b>2017</b> , 23, 10703-10713	44
1365	In Situ Preparation of Pt Nanoparticles Supported on N-Doped Carbon as Highly Efficient Electrocatalysts for Hydrogen Production. <b>2017</b> , 121, 8923-8930	24
1364	Highly stable and efficient non-precious metal electrocatalysts of tantalum dioxyfluoride used for the oxygen evolution reaction. <b>2017</b> , 5, 8287-8291	21
1363	The Performance of Nanoparticulate Graphitic Carbon Nitride as an Amphiphile. <b>2017</b> , 139, 6026-6029	97
1362	A scalable and facile synthesis of carbon nanospheres as a metal free electrocatalyst for oxidation of l-ascorbic acid: Alternate fuel for direct oxidation fuel cells. <b>2017</b> , 799, 609-616	14
1361	Nitrogen and fluorine dual-doped porous graphene-nanosheets as efficient metal-free electrocatalysts for hydrogen-evolution in acidic media. <b>2017</b> , 7, 2228-2235	31
1360	Iron-Doped Cobalt Monophosphide Nanosheet/Carbon Nanotube Hybrids as Active and Stable Electrocatalysts for Water Splitting. <b>2017</b> , 27, 1606635	175
1359	Bifunctional porous non-precious metal WO <sub>2</sub> hexahedral networks as an electrocatalyst for full water splitting. <b>2017</b> , 5, 9655-9660	56
1358	Defect-Engineered Ultrathin MnO <sub>2</sub> Nanosheet Arrays as Bifunctional Electrodes for Efficient Overall Water Splitting. <b>2017</b> , 7, 1700005	373
1357	Sustainability and Nanomaterials in Concert. <b>2017</b> , 9, 3274-3284	6
1356	Recent Methods for the Synthesis of Noble-Metal-Free Hydrogen-Evolution Electrocatalysts: From Nanoscale to Sub-nanoscale. <b>2017</b> , 1, 1700118	76
1355	In situ synthesis of ultrasmall SnO <sub>2</sub> quantum dots on nitrogen-doped reduced graphene oxide composite as high performance anode material for lithium-ion batteries. <b>2017</b> , 727, 1-7	16
1354	Well-Defined 2D Covalent Organic Polymers for Energy Electrocatalysis. <b>2017</b> , 2, 1308-1314	87

1353	Effect of Magnetic Field on HER of Water Electrolysis on NiW Alloy. <b>2017</b> , 8, 375-382	37
1352	High temperature SU-8 pyrolysis for fabrication of carbon electrodes. <b>2017</b> , 125, 91-99	22
1351	One-pot synthesis of MoSe <sub>2</sub> hetero-dimensional hybrid self-assembled by nanodots and nanosheets for electrocatalytic hydrogen evolution and photothermal therapy. <b>2017</b> , 10, 2667-2682	34
1350	Low-temperature Synthesis of Heterostructures of Transition Metal Dichalcogenide Alloys (WMoS) and Graphene with Superior Catalytic Performance for Hydrogen Evolution. <b>2017</b> , 11, 5103-5112	116
1349	Self-Standing CoP Nanosheets Array: A Three-Dimensional Bifunctional Catalyst Electrode for Overall Water Splitting in both Neutral and Alkaline Media. <b>2017</b> , 4, 1840-1845	322
1348	Counteracting Blueshift Optical Absorption and Maximizing Photon Harvest in Carbon Nitride Nanosheet Photocatalyst. <b>2017</b> , 13, 1700376	31
1347	Direct growth of cobalt-rich cobalt phosphide catalysts on cobalt foil: an efficient and self-supported bifunctional electrode for overall water splitting in alkaline media. <b>2017</b> , 5, 10561-10566	99
1346	Constructing carbon-coated high-index (222) faceted tantalum carbide nanocrystals as a robust hydrogen evolution catalyst. <b>2017</b> , 36, 374-380	47
1345	Core-shell structured Ni <sub>12</sub> P <sub>5</sub> /Ni <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub> hollow spheres as difunctional and efficient electrocatalysts for overall water electrolysis. <b>2017</b> , 204, 486-496	106
1344	Atomically Dispersed Iron-Nitrogen Species as Electrocatalysts for Bifunctional Oxygen Evolution and Reduction Reactions. <b>2017</b> , 129, 625-629	103
1343	Atomically Dispersed Iron-Nitrogen Species as Electrocatalysts for Bifunctional Oxygen Evolution and Reduction Reactions. <b>2017</b> , 56, 610-614	759
1342	Controlled synthesis of Mo-doped Ni <sub>3</sub> S <sub>2</sub> nano-rods: an efficient and stable electro-catalyst for water splitting. <b>2017</b> , 5, 1595-1602	108
1341	A Multifunction Lithium-Carbon Battery System Using a Dual Electrolyte. <b>2017</b> , 2, 36-44	23
1340	Uniform and perfectly linear current-voltage characteristics of nitrogen-doped armchair graphene nanoribbons for nanowires. <b>2016</b> , 19, 44-48	10
1339	Carbon-based catalysts for metal-free electrocatalysis. <b>2017</b> , 4, 18-25	70
1338	Nickel-doped nanobelt structured molybdenum oxides as electrocatalysts for electrochemical hydrogen evolution reaction. <b>2017</b> , 19, 1	11
1337	Direct synthesis of interconnected N, S-codoped porous exfoliated carbon nanosheets as advanced electrocatalysts for oxygen reduction reaction. <b>2017</b> , 122, 114-121	32
1336	Promotion of Electrocatalytic Hydrogen Evolution Reaction on Nitrogen-Doped Carbon Nanosheets with Secondary Heteroatoms. <b>2017</b> , 11, 7293-7300	271

1335	Integrated Hierarchical Cobalt Sulfide/Nickel Selenide Hybrid Nanosheets as an Efficient Three-dimensional Electrode for Electrochemical and Photoelectrochemical Water Splitting. <b>2017</b> , 17, 4202-4209	216
1334	Design Strategies toward Advanced MOF-Derived Electrocatalysts for Energy-Conversion Reactions. <b>2017</b> , 7, 1700518	406
1333	Recent Advances of Graphitic Carbon Nitride-Based Structures and Applications in Catalyst, Sensing, Imaging, and LEDs. <b>2017</b> , 9, 47	235
1332	Advancing the $n \rightarrow \pi^*$ electron transition of carbon nitride nanotubes for H <sub>2</sub> photosynthesis. <b>2017</b> , 5, 12723-12728	53
1331	Synthesis of <sup>13</sup> C-, <sup>15</sup> N-Labeled Graphitic Carbon Nitrides and NMR-Based Evidence of Hydrogen-Bonding Assisted Two-Dimensional Assembly. <b>2017</b> , 29, 5080-5089	67
1330	A 2D free-standing film-inspired electrocatalyst for highly efficient hydrogen production. <b>2017</b> , 5, 12027-12033	33
1329	One-pot synthesis of hollow AgPt alloyed nanocrystals with enhanced electrocatalytic activity for hydrogen evolution and oxygen reduction reactions. <b>2017</b> , 505, 307-314	35
1328	K <sub>0.4</sub> TaO <sub>2.4</sub> F <sub>0.6</sub> Nanocubes as Highly Efficient Noble Metal-Free Electrocatalysts for Hydrogen Evolution Reaction in Acidic Media. <b>2017</b> , 245, 193-200	4
1327	Bottom-up synthesis of fully sp <sup>2</sup> hybridized three-dimensional microporous graphitic frameworks as metal-free catalysts. <b>2017</b> , 5, 12080-12085	33
1326	Hierarchical Co <sub>9</sub> S <sub>8</sub> hollow microspheres as multifunctional electrocatalysts for oxygen reduction, oxygen evolution and hydrogen evolution reactions. <b>2017</b> , 246, 380-390	55
1325	Manifestation of Concealed Defects in MoS <sub>2</sub> Nanospheres for Efficient and Durable Electrocatalytic Hydrogen Evolution Reaction. <b>2017</b> , 2, 4667-4672	2
1324	Component Matters: Paving the Roadmap toward Enhanced Electrocatalytic Performance of Graphitic CN-Based Catalysts via Atomic Tuning. <b>2017</b> , 11, 6004-6014	116
1323	0D/2D heterojunctions of molybdenum carbide-tungsten carbide quantum dots/N-doped graphene nanosheets as superior and durable electrocatalysts for hydrogen evolution reaction. <b>2017</b> , 5, 18494-18501	27
1322	Active sites and mechanism on nitrogen-doped carbon catalyst for hydrogen evolution reaction. <b>2017</b> , 348, 151-159	55
1321	Constructing Multifunctional Metallic Ni Interface Layers in the g-CN Nanosheets/Amorphous NiS Heterojunctions for Efficient Photocatalytic H <sub>2</sub> Generation. <b>2017</b> , 9, 14031-14042	256
1320	Heteroatoms dual doped porous graphene nanosheets as efficient bifunctional metal-free electrocatalysts for overall water-splitting. <b>2017</b> , 5, 7784-7790	71
1319	Highly Ordered Nitrogen-Rich Mesoporous Carbon Nitrides and Their Superior Performance for Sensing and Photocatalytic Hydrogen Generation. <b>2017</b> , 129, 8601-8605	34
1318	Highly Ordered Nitrogen-Rich Mesoporous Carbon Nitrides and Their Superior Performance for Sensing and Photocatalytic Hydrogen Generation. <b>2017</b> , 56, 8481-8485	209

1317	From Millimeter to Subnanometer: Vapor-Solid Deposition of Carbon Nitride Hierarchical Nanostructures Directed by Supramolecular Assembly. <b>2017</b> , 129, 8546-8550	14
1316	Emerging two-dimensional nanomaterials for electrochemical hydrogen evolution. <b>2017</b> , 5, 8187-8208	187
1315	Nano-porous Mo <sub>2</sub> C in-situ grafted on macroporous carbon electrode as an efficient 3D hydrogen evolution cathode. <b>2017</b> , 712, 103-110	15
1314	Facile Synthesis of Mo <sub>2</sub> C Nanocrystals Embedded in Nanoporous Carbon Network for Efficient Hydrogen Evolution. <b>2017</b> , 35, 911-917	8
1313	Molecular Design of Polymer Heterojunctions for Efficient Solar-Hydrogen Conversion. <b>2017</b> , 29, 1606198	149
1312	Ni/nitrogen-doped graphene nanotubes acted as a valuable tailor for remarkably enhanced hydrogen evolution performance of platinum-based catalysts. <b>2017</b> , 5, 16249-16254	17
1311	Nitrogen-doped truncated carbon nanotubes inserted into nitrogen-doped graphene nanosheets with a sandwich structure: a highly efficient metal-free catalyst for the HER. <b>2017</b> , 5, 6405-6410	28
1310	CoP nanorods decorated biomass derived N, P co-doped carbon flakes as an efficient hybrid catalyst for electrochemical hydrogen evolution. <b>2017</b> , 232, 561-569	56
1309	Molybdenum Carbide-Embedded Nitrogen-Doped Porous Carbon Nanosheets as Electrocatalysts for Water Splitting in Alkaline Media. <b>2017</b> , 11, 3933-3942	302
1308	Two-dimensional nanosheets for electrocatalysis in energy generation and conversion. <b>2017</b> , 5, 7257-7284	186
1307	Efficient electrocatalysis of overall water splitting by ultrasmall Ni <sub>3</sub> Co <sub>3</sub> S <sub>4</sub> coupled Ni <sub>3</sub> S <sub>2</sub> nanosheet arrays. <b>2017</b> , 35, 161-170	269
1306	Recent Advances in Ultrathin Two-Dimensional Nanomaterials. <b>2017</b> , 117, 6225-6331	2919
1305	Metal-Free Motifs for Solar Fuel Applications. <b>2017</b> , 68, 305-331	12
1304	Twisted Aromatic Frameworks: Readily Exfoliable and Solution-Processable Two-Dimensional Conjugated Microporous Polymers. <b>2017</b> , 56, 6946-6951	74
1303	Simple anodization of home-made screen-printed carbon electrodes makes significant activity enhancement for hydrogen evolution: the synergistic effect of surface functional groups, defect sites, and hydrophilicity. <b>2017</b> , 235, 64-71	13
1302	A novel versatile microbiosensor for local hydrogen detection by means of scanning photoelectrochemical microscopy. <b>2017</b> , 94, 433-437	24
1301	Twisted Aromatic Frameworks: Readily Exfoliable and Solution-Processable Two-Dimensional Conjugated Microporous Polymers. <b>2017</b> , 129, 7050-7055	15
1300	From Millimeter to Subnanometer: Vapor-Solid Deposition of Carbon Nitride Hierarchical Nanostructures Directed by Supramolecular Assembly. <b>2017</b> , 56, 8426-8430	66



1299	Multifunctional Carbon-Based Metal-Free Electrocatalysts for Simultaneous Oxygen Reduction, Oxygen Evolution, and Hydrogen Evolution. <b>2017</b> , 29, 1604942	510
1298	One-Dimensional Earth-Abundant Nanomaterials for Water-Splitting Electrocatalysts. <b>2017</b> , 4, 1600380	195
1297	Polydopamine-Inspired, Dual Heteroatom-Doped Carbon Nanotubes for Highly Efficient Overall Water Splitting. <b>2017</b> , 7, 1602068	256
1296	Synthesis of Cobalt Phosphide Nanoparticles Supported on Pristine Graphene by Dynamically Self-Assembled Graphene Quantum Dots for Hydrogen Evolution. <b>2017</b> , 10, 1014-1021	38
1295	Pyridinic nitrogen-rich carbon nanocapsules from a bioinspired polydopamine derivative for highly efficient electrocatalytic oxygen reduction. <b>2017</b> , 5, 519-523	24
1294	Metal ion-containing C <sub>3</sub> N <sub>3</sub> S <sub>3</sub> coordination polymers chemisorbed to a copper surface as acid stable hydrogen evolution electrocatalysts. <b>2017</b> , 5, 2052-2065	34
1293	N-Carbon coated P-W <sub>2</sub> C composite as efficient electrocatalyst for hydrogen evolution reactions over the whole pH range. <b>2017</b> , 5, 765-772	145
1292	Facile approach for synthesis of doped carbon electrocatalyst from cellulose nanofibrils toward high-performance metal-free oxygen reduction and hydrogen evolution. <b>2017</b> , 32, 336-346	100
1291	Materials for solar fuels and chemicals. <b>2016</b> , 16, 70-81	846
1290	Pine needle-derived microporous nitrogen-doped carbon frameworks exhibit high performances in electrocatalytic hydrogen evolution reaction and supercapacitors. <b>2017</b> , 9, 1237-1243	121
1289	Electropolymerization Fabrication of Co Phosphate Nanoparticles Encapsulated in N,P-Codoped Mesoporous Carbon Networks as a 3D Integrated Electrode for Full Water Splitting. <b>2017</b> , 5, 571-579	29
1288	Metal-free photocatalysts for various applications in energy conversion and environmental purification. <b>2017</b> , 19, 882-899	212
1287	A novel metal-free two-dimensional material for photocatalytic water splitting [phosphorus nitride (EPN)]. <b>2017</b> , 7, 50239-50245	22
1286	A Zn-doped NiS nanosheet array as a high-performance electrochemical water oxidation catalyst in alkaline solution. <b>2017</b> , 53, 12446-12449	264
1285	Modeling of laser-pulse induced water decomposition on two-dimensional materials by simulations based on time-dependent density functional theory. <b>2017</b> , 96,	14
1284	Unlocking the Electrocatalytic Activity of Antimony for CO Reduction by Two-Dimensional Engineering of the Bulk Material. <b>2017</b> , 56, 14718-14722	126
1283	Biomass derived 2D carbons via a hydrothermal carbonization method as efficient bifunctional ORR/HER electrocatalysts. <b>2017</b> , 5, 23481-23488	122
1282	Hydrogen Evolution Reaction Catalyzed by Transition-Metal Nitrides. <b>2017</b> , 121, 24036-24045	69

1281	Facile synthesis and excellent electrochemical performance of CoP nanowire on carbon cloth as bifunctional electrode for hydrogen evolution reaction and supercapacitor. <b>2017</b> , 60, 1179-1186	34
1280	Nitrogen-phosphorus co-doped hollow carbon microspheres with hierarchical micro-meso-macroporous shells as efficient electrodes for supercapacitors. <b>2017</b> , 5, 22631-22640	107
1279	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
1278	Carbon-Based Electrocatalysts for Hydrogen and Oxygen Evolution Reactions. <b>2017</b> , 7, 7855-7865	302
1277	Gas swelling behaviour at different stages in Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> /LiNi <sub>1/3</sub> Co <sub>1/3</sub> Mn <sub>1/3</sub> O <sub>2</sub> pouch cells. <b>2017</b> , 369, 103-110	12
1276	Exclusive Ni-N Sites Realize Near-Unity CO Selectivity for Electrochemical CO Reduction. <b>2017</b> , 139, 14889-14893	32
1275	Ultrafast synthesis of molybdenum carbide nanoparticles for efficient hydrogen generation. <b>2017</b> , 5, 22805-22812	44
1274	Ir-oriented nanocrystalline assemblies with high activity for hydrogen oxidation/evolution reactions in an alkaline electrolyte. <b>2017</b> , 5, 22959-22963	25
1273	Graphitized carbon-coated vanadium carbide nanoboscages modified by nickel with enhanced electrocatalytic activity for hydrogen evolution in both acid and alkaline solutions. <b>2017</b> , 5, 23028-23034	56
1272	Hierarchically interconnected nitrogen-doped carbon nanosheets for an efficient hydrogen evolution reaction. <b>2017</b> , 9, 16342-16348	27
1271	Synthesis, properties, and application of polymeric carbon nitrides. <b>2017</b> , 66, 782-807	7
1270	Hierarchically Porous Co <sub>3</sub> C/Co-N-C/G Modified Graphitic Carbon: A Trifunctional Corrosion-Resistant Electrode for Oxygen Reduction, Hydrogen Evolution and Oxygen Evolution Reactions. <b>2017</b> , 257, 40-48	46
1269	Metallic Cobalt@Nitrogen-Doped Carbon Nanocomposites: Carbon-Shell Regulation toward Efficient Bi-Functional Electrocatalysis. <b>2017</b> , 9, 37721-37730	48
1268	Molybdenum carbide on hierarchical porous carbon synthesized from Cu-MoO <sub>2</sub> as efficient electrocatalysts for electrochemical hydrogen generation. <b>2017</b> , 41, 749-757	88
1267	Filling the oxygen vacancies in Co <sub>3</sub> O <sub>4</sub> with phosphorus: an ultra-efficient electrocatalyst for overall water splitting. <b>2017</b> , 10, 2563-2569	616
1266	Nanoscale, conformal films of graphitic carbon nitride deposited at room temperature: a method for construction of heterojunction devices. <b>2017</b> , 9, 16586-16590	18
1265	Electroplated Ni-Cu nanocrystalline alloys and their electrocatalytic activity for hydrogen generation using alkaline solutions. <b>2017</b> , 42, 28386-28396	30
1264	Rapid Adsorption Enables Interface Engineering of PdMnCo Alloy/Nitrogen-Doped Carbon as Highly Efficient Electrocatalysts for Hydrogen Evolution Reaction. <b>2017</b> , 9, 38419-38427	23

1263	Formation of heterostructures via direct growth CN on h-BN porous nanosheets for metal-free photocatalysis. <b>2017</b> , 42, 58-68	108
1262	Precious metal-free approach to hydrogen electrocatalysis for energy conversion: From mechanism understanding to catalyst design. <b>2017</b> , 42, 69-89	109
1261	A review of nanocarbons in energy electrocatalysis: Multifunctional substrates and highly active sites. <b>2017</b> , 26, 1077-1093	220
1260	A three-dimensional hierarchically porous Mo <sub>2</sub> C architecture: salt-template synthesis of a robust electrocatalyst and anode material towards the hydrogen evolution reaction and lithium storage. <b>2017</b> , 5, 20228-20238	87
1259	MoS Nanosheets Supported on Hollow Carbon Spheres as Efficient Catalysts for Electrochemical Hydrogen Evolution Reaction. <b>2017</b> , 2, 5087-5094	28
1258	Synthesis of 3D-MoO microsphere supported MoSe as an efficient electrocatalyst for hydrogen evolution reaction. <b>2017</b> , 28, 465404	21
1257	Earth-abundant carbon catalysts for renewable generation of clean energy from sunlight and water. <b>2017</b> , 41, 367-376	69
1256	Fast microwave synthesis of SnO <sub>2</sub> @graphene/N-doped carbons as anode materials in sodium ion batteries. <b>2017</b> , 728, 1305-1314	31
1255	Superaerophobic Ultrathin Ni-Mo Alloy Nanosheet Array from In Situ Topotactic Reduction for Hydrogen Evolution Reaction. <b>2017</b> , 13, 1701648	117
1254	Catalysts Encapsulated in Nanostructured Carbon Systems. <b>2017</b> , 71-122	0
1253	Cytosine assisted aqueous synthesis of AgPt hollow alloyed nanostructures as highly active electrocatalyst for ethylene glycol oxidation and hydrogen evolution. <b>2017</b> , 42, 24767-24775	18
1252	Acid promoted Ni/NiO monolithic electrode for overall water splitting in alkaline medium. <b>2017</b> , 60, 918-928	20
1251	NiSe <sub>2</sub> /FeSe <sub>2</sub> nanodendrites: a highly efficient electrocatalyst for oxygen evolution reaction. <b>2017</b> , 7, 4604-4608	42
1250	3D Foam Strutted Graphene Carbon Nitride with Highly Stable Optoelectronic Properties. <b>2017</b> , 27, 1703711	64
1249	Endohedral metallofullerenes (M@C <sub>60</sub> ) as efficient catalysts for highly active hydrogen evolution reaction. <b>2017</b> , 354, 231-235	46
1248	Robust Catalysis on 2D Materials Encapsulating Metals: Concept, Application, and Perspective. <b>2017</b> , 29, 1606967	240
1247	Exploitation of the Large-Area Basal Plane of MoS and Preparation of Bifunctional Catalysts through On-Surface Self-Assembly. <b>2017</b> , 4, 1700356	5
1246	Interfacial charge distributions in carbon-supported palladium catalysts. <i>Nature Communications</i> , <b>2017</b> , 8, 340	17.4 101

1245	Phosphorene for energy and catalytic application filling the gap between graphene and 2D metal chalcogenides. <b>2017</b> , 4, 042006	38
1244	Co-intercalation of multiple active units into graphene by pyrolysis of hydrogen-bonded precursors for zinc-air batteries and water splitting. <b>2017</b> , 5, 20882-20891	31
1243	Nickel-Based Electrocatalysts for Energy-Related Applications: Oxygen Reduction, Oxygen Evolution, and Hydrogen Evolution Reactions. <b>2017</b> , 7, 7196-7225	568
1242	Water-soluble triphenylphosphine-derived microgel as the template towards in-situ nitrogen, phosphorus co-doped mesoporous graphene framework for supercapacitor and electrocatalytic oxygen reduction. <b>2017</b> , 328, 417-427	43
1241	Nitrogen Doped Carbon Nanosheets Coupled Nickel-Carbon Pyramid Arrays Toward Efficient Evolution of Hydrogen. <b>2017</b> , 1, 1700032	9
1240	Theoretical evaluation of the structure-activity relationship in graphene-based electrocatalysts for hydrogen evolution reactions. <b>2017</b> , 7, 27033-27039	11
1239	Nitrogen-Doped Graphene with a Three-Dimensional Architecture Assisted by Carbon Nitride Tetrapods as an Efficient Metal-Free Electrocatalyst for Hydrogen Evolution. <b>2017</b> , 4, 2643-2652	23
1238	Straightforward synthesis of nitrogen-doped carbon nanotubes as highly active bifunctional electrocatalysts for full water splitting. <b>2017</b> , 353, 19-27	82
1237	Graphene/graphitic carbon nitride hybrids for catalysis. <b>2017</b> , 4, 832-850	130
1236	Energy Efficient Synthesis of Ordered Mesoporous Carbon Nitrides with a High Nitrogen Content and Enhanced CO Capture Capacity. <b>2017</b> , 23, 10753-10757	49
1235	Toward Activity Origin of Electrocatalytic Hydrogen Evolution Reaction on Carbon-Rich Crystalline Coordination Polymers. <b>2017</b> , 13, 1700783	13
1234	Cost-Effective Alkaline Water Electrolysis Based on Nitrogen- and Phosphorus-Doped Self-Supportive Electrocatalysts. <b>2017</b> , 29, 1702095	139
1233	Aromatic ring substituted g-C <sub>3</sub> N <sub>4</sub> for enhanced photocatalytic hydrogen evolution. <b>2017</b> , 5, 17199-17203	74
1232	Copper dopants improved the hydrogen evolution activity of earth-abundant cobalt pyrite catalysts by activating the electrocatalytically inert sulfur sites. <b>2017</b> , 5, 17601-17608	44
1231	Ball-milling synthesis of Co <sub>2</sub> P nanoparticles encapsulated in nitrogen doped hollow carbon rods as efficient electrocatalysts. <b>2017</b> , 5, 17563-17569	43
1230	Efficient Water-Splitting Electrodes Based on Laser-Induced Graphene. <b>2017</b> , 9, 26840-26847	63
1229	A Metal-Free Covalent Organic Polymer for Electrocatalytic Hydrogen Evolution. <b>2017</b> , 7, 6120-6127	120
1228	In Situ Fabrication of NiMo Bimetal Sulfide Hybrid as an Efficient Electrocatalyst for Hydrogen Evolution over a Wide pH Range. <b>2017</b> , 7, 6179-6187	210

1227	Hydrogen evolution reaction catalyzed by ruthenium ion-complexed graphitic carbon nitride nanosheets. <b>2017</b> , 5, 18261-18269	102
1226	Tailored Graphitic Carbon Nitride Nanostructures: Synthesis, Modification, and Sensing Applications. <b>2017</b> , 27, 1702695	103
1225	Coral-like-Structured Ni/C <sub>3</sub> N <sub>4</sub> Composite Coating: An Active Electrocatalyst for Hydrogen Evolution Reaction in Alkaline Solution. <b>2017</b> , 5, 7993-8003	57
1224	Self-Templated Fabrication of MoNi /MoO Nanorod Arrays with Dual Active Components for Highly Efficient Hydrogen Evolution. <b>2017</b> , 29, 1703311	300
1223	Comparison of three nickel-based carbon composite catalysts for hydrogen evolution reaction in alkaline solution. <b>2017</b> , 42, 22655-22662	22
1222	Co Nanoparticles/Co, N, S Tri-doped Graphene Templated from In-Situ-Formed Co, S Co-doped g-CN as an Active Bifunctional Electrocatalyst for Overall Water Splitting. <b>2017</b> , 9, 28566-28576	79
1221	Template-synthesis and electrochemical properties of urchin-like NiCoP electrocatalyst for hydrogen evolution reaction. <b>2017</b> , 249, 301-307	22
1220	Hierarchical Porous CoS/Nitrogen-Doped Carbon@MoS Polyhedrons as pH Universal Electrocatalysts for Highly Efficient Hydrogen Evolution Reaction. <b>2017</b> , 9, 28394-28405	135
1219	The effects of exfoliation, organic solvents and anodic activation on the catalytic hydrogen evolution reaction of tungsten disulfide. <b>2017</b> , 9, 13515-13526	25
1218	Electrocatalytic hydrogen evolution reaction activity comparable to platinum exhibited by the Ni/Ni(OH)/graphite electrode. <b>2017</b> , 114, 8986-8990	75
1217	An amorphous dual action electrocatalyst based on oxygen doped cobalt sulfide for the hydrogen and oxygen evolution reactions. <b>2017</b> , 7, 54995-55004	29
1216	Decoration of MoS <sub>2</sub> on g-C <sub>3</sub> N <sub>4</sub> surface for efficient hydrogen evolution reaction. <b>2017</b> , 258, 1273-1283	49
1215	Bimetallic NiCoP Nanosheets Array for High-Performance Urea Electro-Oxidation and Less Energy-Intensive Electrolytic Hydrogen Production. <b>2017</b> , 2, 10285-10289	39
1214	Transition-Metal Phosphide-Carbon Nanosheet Composites Derived from Two-Dimensional Metal-Organic Frameworks for Highly Efficient Electrocatalytic Water-Splitting. <b>2017</b> , 9, 40171-40179	57
1213	Cu@C nanoporous composites containing little copper oxides derived from dimethyl imidazole modified MOF199 as electrocatalysts for hydrogen evolution reaction. <b>2017</b> , 425, 663-673	15
1212	Macroporous Inverse Opal-like MoC with Incorporated Mo Vacancies for Significantly Enhanced Hydrogen Evolution. <b>2017</b> , 11, 7527-7533	84
1211	Interlayer interaction in ultrathin nanosheets of graphitic carbon nitride for efficient photocatalytic hydrogen evolution. <b>2017</b> , 352, 491-497	57
1210	Silver Nanowire/Carbon Sheet Composites for Electrochemical Syngas Generation with Tunable H/CO Ratios. <b>2017</b> , 2, 3441-3446	14

1209	Recent advances in functional mesoporous graphitic carbon nitride (mpg-CN) polymers. <b>2017</b> , 9, 10544-10578	136
1208	Layered Transition-Metal Ditungstenides in Electrocatalytic Applications with Contrasting Properties. <b>2017</b> , 7, 5706-5716	36
1207	Nitrogen-enriched polydopamine analogue-derived defect-rich porous carbon as a bifunctional metal-free electrocatalyst for highly efficient overall water splitting. <b>2017</b> , 5, 17064-17072	50
1206	Constructing Ohmic contact in cobalt selenide/Ti dyadic electrode: The third aspect to promote the oxygen evolution reaction. <b>2017</b> , 39, 321-327	28
1205	Exfoliation of Stable 2D Black Phosphorus for Device Fabrication. <b>2017</b> , 29, 6445-6456	54
1204	Nitrogen-doped nanocarbon materials under electroreduction operating conditions and implications for electrocatalysis of CO <sub>2</sub> . <b>2017</b> , 111, 859-866	20
1203	Sponge-like nickel phosphide-carbon nanotube hybrid electrodes for efficient hydrogen evolution over a wide pH range. <b>2017</b> , 10, 415-425	52
1202	Graphene oxide coupled carbon nitride homo-heterojunction photocatalyst for enhanced hydrogen production. <b>2017</b> , 1, 562-571	27
1201	Efficient Electrochemical and Photoelectrochemical Water Splitting by a 3D Nanostructured Carbon Supported on Flexible Exfoliated Graphene Foil. <b>2017</b> , 29, 1604480	139
1200	A Comprehensive Approach toward Stable Lithium-Sulfur Batteries with High Volumetric Energy Density. <b>2017</b> , 7, 1601630	240
1199	Ultrafine WC nanoparticles anchored on co-encased, N-doped carbon nanotubes for efficient hydrogen evolution. <b>2017</b> , 6, 104-111	42
1198	Substrate-Induced Synthesis of Nitrogen-Doped Holey Graphene Nanocapsules for Advanced Metal-Free Bifunctional Electrocatalysts. <b>2017</b> , 34, 1600207	15
1197	Versatile two-dimensional stanene-based membrane for hydrogen purification. <b>2017</b> , 42, 5577-5583	13
1196	Carbocatalysis in Liquid-Phase Reactions. <b>2017</b> , 56, 936-964	172
1195	A one-dimensional porous carbon-supported Ni/MoC dual catalyst for efficient water splitting. <b>2017</b> , 8, 968-973	301
1194	Immobilizing Molecular Metal Dithiolene-Diamine Complexes on 2D Metal-Organic Frameworks for Electrocatalytic H <sub>2</sub> Production. <b>2017</b> , 23, 2255-2260	154
1193	In-situ wet tearing based subnanometer MoSeS for efficient hydrogen evolution. <b>2017</b> , 60, 929-936	6
1192	A MnCo <sub>2</sub> S <sub>4</sub> nanowire array as an earth-abundant electrocatalyst for an efficient oxygen evolution reaction under alkaline conditions. <b>2017</b> , 5, 17211-17215	112

1191	Self-Supported Ni(P, O)MoO Nanowire Array on Nickel Foam as an Efficient and Durable Electrocatalyst for Alkaline Hydrogen Evolution. <b>2017</b> , 7,	3
1190	Dual-Native Vacancy Activated Basal Plane and Conductivity of MoSe with High-Efficiency Hydrogen Evolution Reaction. <b>2018</b> , 14, e1704150	78
1189	Carbon nanotube-induced phase and stability engineering: a strained cobalt-doped WSe <sub>2</sub> /MWNT heterostructure for enhanced hydrogen evolution reaction. <b>2018</b> , 6, 4793-4800	37
1188	Recent advances in the nanoengineering of electrocatalysts for CO reduction. <b>2018</b> , 10, 6235-6260	109
1187	Catalyzing polysulfide conversion by g-C <sub>3</sub> N <sub>4</sub> in a graphene network for long-life lithium-sulfur batteries. <b>2018</b> , 11, 3480-3489	77
1186	Molecular engineering of polymeric carbon nitride: advancing applications from photocatalysis to biosensing and more. <b>2018</b> , 47, 2298-2321	362
1185	Accelerating oxygen evolution reaction via sodium extraction of Na <sub>0.71</sub> CoO <sub>2</sub> . <b>2018</b> , 268, 316-322	4
1184	An Earth-Abundant Tungsten-Nickel Alloy Electrocatalyst for Superior Hydrogen Evolution. <b>2018</b> , 1, 1228-1235	34
1183	Controlled Synthesis of Eutectic NiSe/Ni <sub>3</sub> Se <sub>2</sub> Self-Supported on Ni Foam: An Excellent Bifunctional Electrocatalyst for Overall Water Splitting. <b>2018</b> , 5, 1701507	49
1182	Recent development on carbon based heterostructures for their applications in energy and environment: A review. <b>2018</b> , 64, 16-59	109
1181	Polydopamine-Derived, In Situ N-Doped 3D Mesoporous Carbons for Highly Efficient Oxygen Reduction. <b>2018</b> , 4, 417-422	15
1180	Facile synthesis of porous dendritic Pt <sub>68</sub> Ag <sub>32</sub> nanodandelions for greatly boosting electrocatalytic activity towards oxygen reduction and hydrogen evolution. <b>2018</b> , 43, 6096-6106	7
1179	Electrodeposition of NiMo/CO composite electrodes for efficient hydrogen production in an alkaline medium. <b>2018</b> , 42, 4661-4669	6
1178	Exploring the formation and electronic structure properties of the g-CN nanoribbon with density functional theory. <b>2018</b> , 30, 155303	7
1177	Syntheses of nickel sulfides from 1,2-bis(diphenylphosphino)ethane nickel(II)dithiolates and their application in the oxygen evolution reaction. <b>2018</b> , 43, 5985-5995	12
1176	Accelerated Hydrogen Evolution Reaction in CoS <sub>2</sub> by Transition-Metal Doping. <b>2018</b> , 3, 779-786	147
1175	Nitrogen electroreduction and hydrogen evolution on cubic molybdenum carbide: a density functional study. <b>2018</b> , 20, 14679-14687	38
1174	Cobalt Molybdenum Oxide Derived High-Performance Electrocatalyst for the Hydrogen Evolution Reaction. <b>2018</b> , 8, 5062-5069	82

1173	Identifying Active Sites of Nitrogen-Doped Carbon Materials for the CO <sub>2</sub> Reduction Reaction. <b>2018</b> , 28, 1800499	179
1172	Trace Level Co/N Doped Graphite Foams as High-Performance Self-Standing Electrocatalytic Electrodes for Hydrogen and Oxygen Evolution. <b>2018</b> , 8, 4637-4644	42
1171	Coupling P Nanostructures with P-Doped g-C <sub>3</sub> N <sub>4</sub> As Efficient Visible Light Photocatalysts for H <sub>2</sub> Evolution and RhB Degradation. <b>2018</b> , 6, 6342-6349	93
1170	Oxygen incorporated WS nanoclusters with superior electrocatalytic properties for hydrogen evolution reaction. <b>2018</b> , 10, 9516-9524	57
1169	Oxidative chemical vapour deposition of a graphene oxide carbocatalyst on 3D nickel foam as a collaborative electrocatalyst towards the hydrogen evolution reaction in acidic electrolyte. <b>2018</b> , 2, 1305-1311 <sup>12</sup>	
1168	Oxidized Laser-Induced Graphene for Efficient Oxygen Electrocatalysis. <b>2018</b> , 30, e1707319	63
1167	Universal molecular-confined synthesis of interconnected porous metal oxides-N-C frameworks for electrocatalytic water splitting. <b>2018</b> , 48, 600-606	50
1166	Solid-phase hot-pressing synthesis of POMOFs on carbon cloth and derived phosphides for all pH value hydrogen evolution. <b>2018</b> , 6, 21969-21977	34
1165	Dynamic Nuclear Polarization NMR Spectroscopy of Polymeric Carbon Nitride Photocatalysts: Insights into Structural Defects and Reactivity. <b>2018</b> , 130, 6964-6968	16
1164	Dynamic Nuclear Polarization NMR Spectroscopy of Polymeric Carbon Nitride Photocatalysts: Insights into Structural Defects and Reactivity. <b>2018</b> , 57, 6848-6852	31
1163	Electrochemical growth of MoS <sub>x</sub> on Cu foam: A highly active and robust three-dimensional cathode for hydrogen evolution. <b>2018</b> , 43, 4978-4986	13
1162	Highly uniform Ru nanoparticles over N-doped carbon: pH and temperature-universal hydrogen release from water reduction. <b>2018</b> , 11, 800-806	286
1161	Tuning active sites on cobalt/nitrogen doped graphene for electrocatalytic hydrogen and oxygen evolution. <b>2018</b> , 265, 497-506	40
1160	Synchrotron Soft X-ray Absorption Spectroscopy Study of Carbon and Silicon Nanostructures for Energy Applications. <b>2018</b> , 275-319	1
1159	Co <sub>3</sub> O <sub>4</sub> nanocrystals with exposed low-surface-energy planes anchored on chemically integrated graphitic carbon nitride-modified nitrogen-doped graphene: A high-performance anode material for lithium-ion batteries. <b>2018</b> , 439, 447-455	11
1158	Electrolytic Synthesis of Ni-W-MWCNT Composite Coating for Alkaline Hydrogen Evolution Reaction. <b>2018</b> , 27, 1033-1039	5
1157	Tuning the Adsorption Energy of Methanol Molecules Along Ni-N-Doped Carbon Phase Boundaries by the Mott-Schottky Effect for Gas-Phase Methanol Dehydrogenation. <b>2018</b> , 130, 2727-2731	14
1156	Van der Waals Heterostructures Comprised of Ultrathin Polymer Nanosheets for Efficient Z-Scheme Overall Water Splitting. <b>2018</b> , 130, 3512-3516	49



1155	Metal-Organic Framework-Derived CoZnC/Co Embedded in Nitrogen-Doped Carbon Nanotube-Grafted Carbon Polyhedra as a High-Performance Electrocatalyst for Water Splitting. <b>2018</b> , 10, 6245-6252	54
1154	Van der Waals Heterostructures Comprised of Ultrathin Polymer Nanosheets for Efficient Z-Scheme Overall Water Splitting. <b>2018</b> , 57, 3454-3458	176
1153	A general potentiodynamic approach for red phosphorus and sulfur nanodot incorporation on reduced graphene oxide sheets: metal-free and binder-free electrodes for supercapacitor and hydrogen evolution activities. <b>2018</b> , 6, 3141-3150	21
1152	Tuning the Adsorption Energy of Methanol Molecules Along Ni-N-Doped Carbon Phase Boundaries by the Mott-Schottky Effect for Gas-Phase Methanol Dehydrogenation. <b>2018</b> , 57, 2697-2701	58
1151	Die Wasserstoffentwicklungsreaktion in alkalischer Lösung: Von der Theorie und Einkristallmodellen zu praktischen Elektrokatalysatoren. <b>2018</b> , 130, 7690-7702	64
1150	Ru Modulation Effects in the Synthesis of Unique Rod-like Ni@NiP-Ru Heterostructures and Their Remarkable Electrocatalytic Hydrogen Evolution Performance. <b>2018</b> , 140, 2731-2734	211
1149	Creating Graphitic Carbon Nitride Based Donor-Acceptor-Donor Structured Catalysts for Highly Photocatalytic Hydrogen Evolution. <b>2018</b> , 14, e1703599	65
1148	Plasma-Assisted Synthesis and Surface Modification of Electrode Materials for Renewable Energy. <b>2018</b> , 30, e1705850	323
1147	Engineered MoSe <sub>2</sub> -Based Heterostructures for Efficient Electrochemical Hydrogen Evolution Reaction. <b>2018</b> , 8, 1703212	107
1146	Highly Dispersed Mo <sub>2</sub> C Anchored on N,P-Codoped Graphene as Efficient Electrocatalyst for Hydrogen Evolution Reaction. <b>2018</b> , 10, 2300-2304	11
1145	Dynamic traction of lattice-confined platinum atoms into mesoporous carbon matrix for hydrogen evolution reaction. <b>2018</b> , 4, eaa06657	344
1144	Facile Spot-Heating Synthesis of Carbon Dots/Carbon Nitride for Solar Hydrogen Evolution Synchronously with Contaminant Decomposition. <b>2018</b> , 28, 1706462	86
1143	Engineering oxygen-containing and amino groups into two-dimensional atomically-thin porous polymeric carbon nitrogen for enhanced photocatalytic hydrogen production. <b>2018</b> , 11, 566-571	223
1142	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
1141	Graphitic Carbon Nitride as a Distinct Solid Stabilizer for Emulsion Polymerization. <b>2018</b> , 24, 2286-2291	27
1140	Ionic Liquid-Assisted Synthesis of Mesoporous Carbons with Surface-Enriched Nitrogen for the Hydrogen Evolution Reaction. <b>2018</b> , 10, 3912-3920	33
1139	Carbon, nitrogen and phosphorus containing metal-free photocatalysts for hydrogen production: progress and challenges. <b>2018</b> , 6, 1305-1322	125
1138	Three-Dimensional Graphene Networks with Abundant Sharp Edge Sites for Efficient Electrocatalytic Hydrogen Evolution. <b>2018</b> , 130, 198-203	30

1137	Synergetic Contribution of Boron and Fe <sub>N</sub> x Species in Porous Carbons toward Efficient Electrocatalysts for Oxygen Reduction Reaction. <b>2018</b> , 3, 252-260	184
1136	Strategies for Stabilizing Atomically Dispersed Metal Catalysts. <b>2018</b> , 2, 1700286	174
1135	Highly active and stable electrocatalytic hydrogen evolution catalyzed by nickel, iron doped cobalt disulfide@reduced graphene oxide nanohybrid electrocatalysts. <b>2018</b> , 7, 44-50	34
1134	Ultrathin molybdenum disulfide/carbon nitride nanosheets with abundant active sites for enhanced hydrogen evolution. <b>2018</b> , 10, 1766-1773	46
1133	Low-ruthenium-content NiRu nanoalloys encapsulated in nitrogen-doped carbon as highly efficient and pH-universal electrocatalysts for the hydrogen evolution reaction. <b>2018</b> , 6, 1376-1381	129
1132	Functionalized Carbon Nanotubes for Highly Active and Metal-Free Electrocatalysts in Hydrogen Evolution Reaction. <b>2018</b> , 9, 573-581	14
1131	Role of MoSe <sub>2</sub> on nanostructures WO <sub>3</sub> -CNT performance for photocatalytic hydrogen evolution. <b>2018</b> , 44, 6686-6690	100
1130	First-Principles Study on Stability and HER Activity of Noble Metal Single Atoms on TiO <sub>2</sub> : The Effect of Loading Density. <b>2018</b> , 122, 2546-2553	18
1129	Biomimetic organization of a ruthenium-doped collagen-based carbon scaffold for hydrogen evolution. <b>2018</b> , 6, 2311-2317	25
1128	Electrocatalytic hydrogen evolution of palladium nanoparticles electrodeposited on nanographene coated macroporous electrically conductive network. <b>2018</b> , 43, 2171-2183	9
1127	Self-Supported Ternary Ni-S-Se Nanorod Arrays as Highly Active Electrocatalyst for Hydrogen Generation in Both Acidic and Basic Media: Experimental Investigation and DFT Calculation. <b>2018</b> , 10, 2430-2441	68
1126	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
1125	Preparation of amorphous NiP-based catalysts for hydrogen evolution reactions. <b>2018</b> , 46, 473-478	12
1124	A Large-Scale GrapheneBimetal Film Electrode with an Ultrahigh Mass Catalytic Activity for Durable Water Splitting. <b>2018</b> , 8, 1800403	24
1123	NiMoD nanorod-derived composite catalysts for efficient alkaline water-to-hydrogen conversion via urea electrolysis. <b>2018</b> , 11, 1890-1897	335
1122	Metal-Free 2D/2D Phosphorene/g-C N Van der Waals Heterojunction for Highly Enhanced Visible-Light Photocatalytic H Production. <b>2018</b> , 30, e1800128	521
1121	MP(M = Co/Ni)@carbon core-shell nanoparticles embedded in 3D cross-linked graphene aerogel derived from seaweed biomass for hydrogen evolution reaction. <b>2018</b> , 10, 9698-9706	42
1120	Hydrogen gas generation using a metal-free fluorinated porphyrin. <b>2018</b> , 9, 4689-4695	27

1119	Highly efficient catalytic activity for the hydrogen evolution reaction on pristine and monovacancy defected WP systems: a first-principles investigation. <b>2018</b> , 20, 13757-13764	20
1118	A theoretical study on the surface and interfacial properties of Ni3P for the hydrogen evolution reaction. <b>2018</b> , 6, 7827-7834	36
1117	An Amperometric Sensor for Low Level Detection of Antidepressant Drug Carbamazepine Based on Graphene Oxide-g-C3N4Composite Film Modified Electrode. <b>2018</b> , 165, B160-B166	18
1116	Controlled Growth of MoS2 Nanosheets on 2D N-Doped Graphdiyne Nanolayers for Highly Associated Effects on Water Reduction. <b>2018</b> , 28, 1707564	82
1115	Synergistic effect of an atomically dual-metal doped catalyst for highly efficient oxygen evolution. <b>2018</b> , 6, 6840-6846	76
1114	One-dimensional hierarchical MoO-MoS hybrids as highly active and durable catalysts in the hydrogen evolution reaction. <b>2018</b> , 47, 6041-6048	12
1113	Graphene-based nanomaterials in innovative electrochemistry. <b>2018</b> , 10, 24-30	14
1112	Benign synthesis of robust nickel thin films as stretchable electrodes for electrochemical hydrogen evolution reaction. <b>2018</b> , 43, 7397-7404	6
1111	Theoretical insights into the effective hydrogen evolution on CuP and its evident improvement by surface-doped Ni atoms. <b>2018</b> , 20, 10407-10417	24
1110	Universal Descriptor for Large-Scale Screening of High-Performance MXene-Based Materials for Energy Storage and Conversion. <b>2018</b> , 30, 2687-2693	47
1109	Engineering Ultrathin C3N4 Quantum Dots on Graphene as a Metal-Free Water Reduction Electrocatalyst. <b>2018</b> , 8, 3965-3970	99
1108	Highly Water Dispersible Polymer Acid-Doped Polyanilines as Low-Cost, Nafion-Free Ionomers for Hydrogen Evolution Reaction. <b>2018</b> , 1, 1512-1521	12
1107	N-doped graphitic carbon materials hybridized with transition metals (compounds) for hydrogen evolution reaction: Understanding the synergistic effect from atomistic level. <b>2018</b> , 133, 260-266	75
1106	Thermal conductivities of two-dimensional graphitic carbon nitrides by molecule dynamics simulation. <b>2018</b> , 123, 738-746	43
1105	Carbon-Based Metal-Free Electrocatalysis for Energy Conversion, Energy Storage, and Environmental Protection. <b>2018</b> , 1, 84-112	109
1104	Molybdenum Carbide-Decorated Metallic Cobalt@Nitrogen-Doped Carbon Polyhedrons for Enhanced Electrocatalytic Hydrogen Evolution. <b>2018</b> , 14, e1704227	77
1103	Investigation on energy storage and conversion properties of multifunctional PANI-MWCNT composite. <b>2018</b> , 43, 7128-7139	35
1102	Two-dimensional Co3W3C nanosheets on graphene nanocomposition: An Pt-like electrocatalyst toward hydrogen evolution reaction in wide pH range. <b>2018</b> , 8, 65-72	16

1101	Emerging Two-Dimensional Nanomaterials for Electrocatalysis. <b>2018</b> , 118, 6337-6408	1057
1100	Cobalt encapsulated N-doped defect-rich carbon nanotube as pH universal hydrogen evolution electrocatalyst. <b>2018</b> , 446, 10-17	40
1099	Construction of hierarchical NiCoP hollow nanobricks with oriented nanosheets for efficient overall water splitting. <b>2018</b> , 11, 872-880	564
1098	Selected fundamentals of catalysis and electrocatalysis in energy conversion reactions: A tutorial. <b>2018</b> , 309, 263-268	10
1097	Adsorption of H <sub>2</sub> O, H <sub>2</sub> , O <sub>2</sub> , CO, NO, and CO <sub>2</sub> on graphene/g-C <sub>3</sub> N <sub>4</sub> nanocomposite investigated by density functional theory. <b>2018</b> , 430, 125-136	42
1096	Solar-to-Hydrogen Energy Conversion Based on Water Splitting. <b>2018</b> , 8, 1701620	285
1095	Porous Materials as Highly Efficient Electrocatalysts for the Oxygen Evolution Reaction. <b>2018</b> , 10, 1206-1220	51
1094	3D Porous Carbonaceous Electrodes for Electrocatalytic Applications. <b>2018</b> , 2, 76-93	72
1093	Hierarchically Structured NiFeOx/CuO Nanosheets/Nanowires as an Efficient Electrocatalyst for the Oxygen Evolution Reaction. <b>2018</b> , 10, 1005-1011	18
1092	Facile one-step synthesis of hollow mesoporous g-C <sub>3</sub> N <sub>4</sub> spheres with ultrathin nanosheets for photoredox water splitting. <b>2018</b> , 126, 247-256	153
1091	Advanced catalysts for sustainable hydrogen generation and storage via hydrogen evolution and carbon dioxide/nitrogen reduction reactions. <b>2018</b> , 92, 64-111	161
1090	Encapsulating Co P@C Core-Shell Nanoparticles in a Porous Carbon Sandwich as Dual-Doped Electrocatalyst for Hydrogen Evolution. <b>2018</b> , 11, 376-388	40
1089	High-metallic-phase-concentration Mo <sub>1-x</sub> W <sub>x</sub> S <sub>2</sub> nanosheets with expanded interlayers as efficient electrocatalysts. <b>2018</b> , 11, 1687-1698	26
1088	The visible light hydrogen production of the Z-Scheme Ag <sub>3</sub> PO <sub>4</sub> /Ag/g-C <sub>3</sub> N <sub>4</sub> nanosheets composites. <b>2018</b> , 53, 1978-1986	39
1087	Electrospun three dimensional Co/CoP@nitrogen-doped carbon nanofibers network for efficient hydrogen evolution. <b>2018</b> , 12, 44-53	115
1086	Construction of a hierarchical 3D Co/N-carbon electrocatalyst for efficient oxygen reduction and overall water splitting. <b>2018</b> , 6, 489-497	90
1085	Applications of Phosphorene and Black Phosphorus in Energy Conversion and Storage Devices. <b>2018</b> , 8, 1702093	272
1084	The Hydrogen Evolution Reaction in Alkaline Solution: From Theory, Single Crystal Models, to Practical Electrocatalysts. <b>2018</b> , 57, 7568-7579	659

1083	3D Mesoporous van der Waals Heterostructures for Trifunctional Energy Electrocatalysis. <b>2018</b> , 30, 1705110	132
1082	Single-Site Au Catalyst for Silane Oxidation with Water. <b>2018</b> , 30, 1704720	84
1081	Integrating the active OER and HER components as the heterostructures for the efficient overall water splitting. <b>2018</b> , 44, 353-363	344
1080	Covalently Bonded MoS <sub>2</sub> /Borocarbonitride Nanocomposites Generated by Using Surface Functionalities on the Nanosheets and Their Remarkable HER Activity. <b>2018</b> , 122, 13376-13384	30
1079	Phase controllable fabrication of zinc cobalt sulfide hollow polyhedra as high-performance electrocatalysts for the hydrogen evolution reaction. <b>2018</b> , 10, 1774-1778	28
1078	Solid Synthesis of Ultrathin Palladium and Its Alloys Nanosheets on RGO with High Catalytic Activity for Oxygen Reduction Reaction. <b>2018</b> , 8, 910-919	44
1077	Voltammetric and Scanning Electrochemical Microscopy Investigations of the Hydrogen Evolution Reaction in Acid at Nanostructured Ensembles of Ultramicroelectrode Dimensions: Theory and Experiment. <b>2018</b> , 122, 71-82	8
1076	Polycrystalline CoP/CoP <sub>2</sub> Structures for Efficient Full Water Splitting. <b>2018</b> , 5, 701-707	81
1075	Metal-free bifunctional carbon electrocatalysts derived from zeolitic imidazolate frameworks for efficient water splitting. <b>2018</b> , 2, 102-111	40
1074	Ruthenium Ion-Complexed Graphitic Carbon Nitride Nanosheets Supported on Reduced Graphene Oxide as High-Performance Catalysts for Electrochemical Hydrogen Evolution. <b>2018</b> , 11, 130-136	54
1073	Flower-like CoP microballs assembled with (002) facet nanowires via precursor route: Efficient electrocatalysts for hydrogen and oxygen evolution. <b>2018</b> , 259, 830-840	28
1072	Three-Dimensional Graphene Networks with Abundant Sharp Edge Sites for Efficient Electrocatalytic Hydrogen Evolution. <b>2018</b> , 57, 192-197	82
1071	Simultaneous edge and electronic control of MoS nanosheets through Fe doping for an efficient oxygen evolution reaction. <b>2018</b> , 10, 20113-20119	43
1070	CoO-modified Co <sub>4</sub> N as a heterostructured electrocatalyst for highly efficient overall water splitting in neutral media. <b>2018</b> , 6, 24767-24772	69
1069	A MOF-derived coral-like NiSe@NC nanohybrid: an efficient electrocatalyst for the hydrogen evolution reaction at all pH values. <b>2018</b> , 10, 22758-22765	65
1068	CN: an excellent catalyst for the hydrogen evolution reaction. <b>2018</b> , 20, 27970-27974	22
1067	Ferric phosphide carbon nanocomposites emerging as highly active electrocatalysts for the hydrogen evolution reaction. <b>2018</b> , 47, 16011-16018	10
1066	Ordered Mesoporous C <sub>3</sub> N <sub>5</sub> with a Combined Triazole and Triazine Framework and Its Graphene Hybrids for the Oxygen Reduction Reaction (ORR). <b>2018</b> , 130, 17381-17386	44

1065	From metal to metal-free catalysts: Routes to sustainable chemistry. <b>2018</b> , 63, 1-73	11
1064	Ordered Mesoporous C N with a Combined Triazole and Triazine Framework and Its Graphene Hybrids for the Oxygen Reduction Reaction (ORR). <b>2018</b> , 57, 17135-17140	92
1063	Graphitic carbon nitride (g-C <sub>3</sub> N <sub>4</sub> ) electrodes for energy conversion and storage: a review on photoelectrochemical water splitting, solar cells and supercapacitors. <b>2018</b> , 6, 22346-22380	166
1062	Porous Mn-Doped CoP <sub>3</sub> Nanowires as a Janus Electrocatalyst for Efficient Overall Water Splitting in Alkaline Solution. <b>2018</b> , 165, F1323-F1330	10
1061	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
1060	Functionalization of Graphite with the Diels-Alder Reaction to Fabricate Metal-Free Electrocatalysts for Highly Efficient Hydrogen Evolution Reaction. <b>2018</b> , 3, 13070-13075	3
1059	Exploring the synergy of 2D MXene-supported black phosphorus quantum dots in hydrogen and oxygen evolution reactions. <b>2018</b> , 6, 21255-21260	100
1058	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
1057	Tuning Metal Catalyst with Metal-C <sub>3</sub> N <sub>4</sub> Interaction for Efficient CO <sub>2</sub> Electroreduction. <b>2018</b> , 8, 11035-11041	94
1056	Metal-Free Single Atom Catalyst for N Fixation Driven by Visible Light. <b>2018</b> , 140, 14161-14168	460
1055	Epitaxial MoS <sub>2</sub> nanosheets on nitrogen doped graphite foam as a 3D electrode for highly efficient electrochemical hydrogen evolution. <b>2018</b> , 292, 407-418	25
1054	Recent Advances in the Electro-Oxidation of Urea for Direct Urea Fuel Cell and Urea Electrolysis. <b>2018</b> , 376, 42	82
1053	Promise and Challenge of Phosphorus in Science, Technology, and Application. <b>2018</b> , 28, 1803471	49
1052	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
1051	Two-Dimensional Sandwich-Structured Mesoporous MoC/Carbon/Graphene Nanohybrids for Efficient Hydrogen Production Electrocatalysts. <b>2018</b> , 10, 40800-40807	35
1050	Atmospheric-Pressure Synthesis of 2D Nitrogen-Rich Tungsten Nitride. <b>2018</b> , 30, e1805655	69
1049	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
1048	Insights into the Electrocatalytic Hydrogen Evolution Reaction Mechanism on Two-Dimensional Transition-Metal Carbonitrides (MXene). <b>2018</b> , 24, 18479-18486	54

1047	Superlong Single-Crystal Metal-Organic Framework Nanotubes. <b>2018</b> , 140, 15393-15401	153
1046	Remarkable photochemical HER activity of semiconducting 2H (hbox {MoSe}_{2}) and (hbox {MoS}_{2}) covalently linked to layers of 2D structures and of the stable metallic 1T phases prepared solvo- or hydro-thermally(^{S}). <b>2018</b> , 130, 1	9
1045	Sub-1.5 nm Ultrathin CoP Nanosheet Aerogel: Efficient Electrocatalyst for Hydrogen Evolution Reaction at All pH Values. <b>2018</b> , 14, e1802824	70
1044	Optimizing MoS <sub>2</sub> Edges by Alloying Isovalent W for Robust Hydrogen Evolution Activity. <b>2018</b> , 8, 9529-9536	54
1043	Electrocatalytic hydrogen evolution using metal-free porphyrins. <b>2018</b> , 43, 18843-18849	14
1042	Simple synthesis of nitrogen-doped porous carbon from Chinese steamed bread flour and its catalytic application for hydrogen evolution reaction. <b>2018</b> , 290, 30-37	11
1041	Electrocatalytic Activity of Carbon in N-Doped Graphene to Achieve High-Energy Density LiS Batteries. <b>2018</b> , 122, 23045-23052	13
1040	Design of Carbon-Based Metal-Free Electrocatalysts. <b>2018</b> , 35-58	
1039	Unraveling the Active Site on Metal-Free, Carbon-Based Catalysts for Multifunctional Applications. <b>2018</b> , 251-283	
1038	Carbon-Based, Metal-Free Electrocatalysts for Renewable Energy Technologies. <b>2018</b> , 313-334	
1037	Carbon-Based Electrochemical Oxygen Reduction and Hydrogen Evolution Catalysts. <b>2018</b> , 403-455	1
1036	Metal-organic frameworks and their derivatives as bifunctional electrocatalysts. <b>2018</b> , 376, 430-448	125
1035	Confined Pyrolysis within a Nanochannel to Form a Highly Efficient Single Iron Site Catalyst for Zn <sup>2+</sup> /Air Batteries. <b>2018</b> , 3, 2383-2389	58
1034	Mechanistic investigations on emission characteristics from g-C <sub>3</sub> N <sub>4</sub> , g-C <sub>3</sub> N <sub>4</sub> @Pt and g-C <sub>3</sub> N <sub>4</sub> @Ag nanostructures using X-ray absorption spectroscopy. <b>2018</b> , 18, 1458-1464	9
1033	Polyoxomolybdate-derived carbon-encapsulated multicomponent electrocatalysts for synergistically boosting hydrogen evolution. <b>2018</b> , 6, 17874-17881	23
1032	Cobalt phosphosulfide in the tetragonal phase: a highly active and durable catalyst for the hydrogen evolution reaction. <b>2018</b> , 6, 12353-12360	36
1031	Scalable cellulose-sponsored functionalized carbon nanorods induced by cobalt for efficient overall water splitting. <b>2018</b> , 137, 274-281	38
1030	Reconstructing Supramolecular Aggregates to Nitrogen-Deficient g-CN Bunchy Tubes with Enhanced Photocatalysis for H <sub>2</sub> Production. <b>2018</b> , 10, 18746-18753	69

1029	Design of Palladium-Doped g-C <sub>3</sub> N <sub>4</sub> for Enhanced Photocatalytic Activity toward Hydrogen Evolution Reaction. <b>2018</b> , 1, 2866-2873	48
1028	Strong Coupling of MoS Nanosheets and Nitrogen-Doped Graphene for High-Performance Pseudocapacitance Lithium Storage. <b>2018</b> , 14, e1704410	72
1027	Structural Engineering of 3D Carbon Materials from Transition Metal Ion-Exchanged Y Zeolite Templates. <b>2018</b> , 30, 3779-3788	20
1026	Sunlight-driven water-splitting using two-dimensional carbon based semiconductors. <b>2018</b> , 6, 12876-12931	159
1025	Dopamine Modified g-C <sub>3</sub> N <sub>4</sub> and Its Enhanced Visible-Light Photocatalytic H <sub>2</sub> -Production Activity. <b>2018</b> , 6, 8945-8953	138
1024	Structure-optimized CoP-carbon nanotube composite microspheres synthesized by spray pyrolysis for hydrogen evolution reaction. <b>2018</b> , 763, 652-661	27
1023	Graphite carbon nitride/boron-doped graphene hybrid for efficient hydrogen generation reaction. <b>2018</b> , 29, 345705	15
1022	Transferrable polymeric carbon nitride/nitrogen-doped graphene films for solid state optoelectronics. <b>2018</b> , 138, 69-75	15
1021	Manipulation structure of carbon nitride via trace level iron with improved interfacial redox activity and charge separation for synthetic enhancing photocatalytic hydrogen evolution. <b>2018</b> , 456, 609-614	11
1020	Ionic Liquid Originated Synthesis of N,P-doped Graphene for Hydrogen Evolution Reaction. <b>2018</b> , 3, 6814-6820	3
1019	Organophosphoric acid-derived CoP quantum dots@S,N-codoped graphite carbon as a trifunctional electrocatalyst for overall water splitting and Zn-air batteries. <b>2018</b> , 10, 14613-14626	55
1018	Engineering nanoporous Ag/Pd core/shell interfaces with ultrathin Pt doping for efficient hydrogen evolution reaction over a wide pH range. <b>2018</b> , 6, 14281-14290	28
1017	Atomically Thin Defect-Rich FeMnD Hybrid Nanosheets as High Efficient Electrocatalyst for Water Oxidation. <b>2018</b> , 28, 1802463	122
1016	Simplest MOF Units for Effective Photodriven Hydrogen Evolution Reaction. <b>2018</b> , 140, 9159-9166	43
1015	Hierarchical carbon-silicon nanowire heterostructures for the hydrogen evolution reaction. <b>2018</b> , 10, 13936-13941	16
1014	Porphyrin-like Fe-N <sub>4</sub> sites with sulfur adjustment on hierarchical porous carbon for different rate-determining steps in oxygen reduction reaction. <b>2018</b> , 11, 6260-6269	83
1013	Preparation and Characterization of Nickel-iron Alloy Film as Freestanding Electrode for Oxygen Evolution Reaction. <b>2018</b> , 160, 03001	
1012	Cobalt and nitrogen-codoped ordered mesoporous carbon as highly efficient bifunctional catalysts for oxygen reduction and hydrogen evolution reactions. <b>2018</b> , 6, 17067-17074	30



1011	Highly Bendable Ionic Soft Actuator Based on Nitrogen-Enriched 3D Hetero-Nanostructure Electrode. <b>2018</b> , 28, 1802464	32
1010	Narrowing the band gap of graphitic carbon nitride sheet by coupling organic moieties: A DFT approach. <b>2018</b> , 707, 101-107	12
1009	Polar Ultrathin Self-Doping Carbon Nitride Nanosheets with Intrinsic Polysulfide Adsorption for High Performance Lithium-Sulfur Batteries. <b>2018</b> , 1, 192-201	19
1008	Boosting electrocatalytic activity of ultrathin MoSe <sub>2</sub> /C composites for hydrogen evolution via a surfactant assisted hydrothermal method. <b>2018</b> , 43, 15749-15761	14
1007	Engineering the Coordination Environment of Single-Atom Platinum Anchored on Graphdiyne for Optimizing Electrocatalytic Hydrogen Evolution. <b>2018</b> , 130, 9526-9530	35
1006	Metal/covalent organic frameworks-based electrocatalysts for water splitting. <b>2018</b> , 6, 15905-15926	180
1005	High-Efficient, Stable Electrocatalytic Hydrogen Evolution in Acid Media by Amorphous Fe P Coating Fe N Supported on Reduced Graphene Oxide. <b>2018</b> , 14, e1801717	57
1004	Carbon-based Electrocatalysts for Water-splitting. <b>2018</b> , 459-483	1
1003	Effect of Thermal Treatment on the Atomic Structure and Electrochemical Characteristics of Bimetallic PtCu Core-Shell Nanoparticles in PtCu/C Electrocatalysts. <b>2018</b> , 122, 17199-17210	14
1002	Bottom-up Synthesis of Porous NiMo Alloy for Hydrogen Evolution Reaction. <b>2018</b> , 8, 83	21
1001	Recent advances in hydrogen evolution reaction catalysts on carbon/carbon-based supports in acid media. <b>2018</b> , 398, 9-26	101
1000	Iron Vacancies Induced Bifunctionality in Ultrathin Feroxyhyte Nanosheets for Overall Water Splitting. <b>2018</b> , 30, e1803144	160
999	Nickel foam derived nitrogen doped nickel sulfide nanowires as an efficient electrocatalyst for the hydrogen evolution reaction. <b>2018</b> , 47, 9871-9876	14
998	Sulfur-Doped Nickel Phosphide Nanoplates Arrays: A Monolithic Electrocatalyst for Efficient Hydrogen Evolution Reactions. <b>2018</b> , 10, 26303-26311	62
997	Review on fabrication of graphitic carbon nitride based efficient nanocomposites for photodegradation of aqueous phase organic pollutants. <b>2018</b> , 67, 28-51	204
996	One-step electrodeposition of a hierarchically structured S-doped NiCo film as a highly-efficient electrocatalyst for the hydrogen evolution reaction. <b>2018</b> , 10, 15238-15248	35
995	Nitrogen-doped flexible carbon cloth for durable metal free electrocatalyst for overall water splitting. <b>2018</b> , 347, 407-413	22
994	"Alternated cooling and heating" strategy enables rapid fabrication of highly-crystalline g-C <sub>3</sub> N <sub>4</sub> nanosheets for efficient photocatalytic water purification under visible light irradiation. <b>2018</b> , 137, 19-30	43

- 993 Understanding the Roles of Nitrogen Configurations in Hydrogen Evolution: Trace Atomic Cobalt Boosts the Activity of Planar Nitrogen-Doped Graphene. **2018**, 3, 1345-1352 52
- 992 Porous nickel hollow fiber cathodes coated with CNTs for efficient microbial electrosynthesis of acetate from CO<sub>2</sub> using *Sporomusa ovata*. **2018**, 6, 17201-17211 57
- 991 Hybrid cobalt-based electrocatalysts with adjustable compositions for electrochemical water splitting derived from Co<sub>2</sub>-Loaded MIL-53(Fe) particles. **2018**, 286, 397-405 17
- 990 Carbon-Capped Zerovalent Nickel and Cobalt Nanoparticles as Multitask Hybrid Electrocatalysts. **2018**, 1, 4939-4949 4
- 989 Carbon Encapsulated Hollow CoO Composites Derived from Reduced Graphene Oxide Wrapped Metal-Organic Frameworks with Enhanced Lithium Storage and Water Oxidation Properties. **2018**, 57, 10649-10655 25
- 988 Heavily Doped and Highly Conductive Hierarchical Nanoporous Graphene for Electrochemical Hydrogen Production. **2018**, 130, 13486-13491 8
- 987 Heavily Doped and Highly Conductive Hierarchical Nanoporous Graphene for Electrochemical Hydrogen Production. **2018**, 57, 13302-13307 51
- 986 A pyrazine-incorporated graphdiyne nanofilm as a metal-free electrocatalyst for the hydrogen evolution reaction. **2018**, 6, 22189-22194 35
- 985 Electrocatalysts based on metal@carbon core@shell nanocomposites: An overview. **2018**, 3, 335-351 52
- 984 Assessment of Electrocatalytic Performance of Metal-Free C-Doped BN Nanoflakes for Oxygen Reduction and Hydrogen Evolution Reactions: A Comparative Study. **2018**, 122, 21124-21131 8
- 983 Hierarchical molybdenum carbide/N-doped carbon as efficient electrocatalyst for hydrogen evolution reaction in alkaline solution. **2018**, 43, 17244-17251 16
- 982 A stepwise crosslinking strategy toward lamellar carbon frameworks with covalently connected alternate layers of porous carbon nanosheets and porous carbon spacers. **2018**, 54, 10332-10335 3
- 981 Edge-Terminated MoS<sub>2</sub> Nanoassembled Electrocatalyst via In Situ Hybridization with 3D Carbon Network. **2018**, 14, e1802191 12
- 980 In Situ Dynamic Nanostructuring of the Cu-Ti Catalyst-Support System Promotes Hydrogen Evolution under Alkaline Conditions. **2018**, 10, 29583-29592 14
- 979 Activation of defective nickel molybdate nanowires for enhanced alkaline electrochemical hydrogen evolution. **2018**, 10, 16539-16546 21
- 978 Tailoring the Structure of Carbon Nanomaterials toward High-End Energy Applications. **2018**, 30, e1802104 65
- 977 A Universal Strategy to Metal Wavy Nanowires for Efficient Electrochemical Water Splitting at pH-Universal Conditions. **2018**, 28, 1803722 49
- 976 Tuning the catalytic activity of heterogeneous two-dimensional transition metal dichalcogenides for hydrogen evolution. **2018**, 6, 20005-20014 41

975	Polymeric graphitic carbon nitride nanosheet-coated amorphous carbon supports for enhanced fuel cell electrode performance and stability. <b>2018</b> , 237, 318-326	21
974	Hybrid 0D/2D black phosphorus quantum dots/graphitic carbon nitride nanosheets for efficient hydrogen evolution. <b>2018</b> , 50, 552-561	102
973	Reactive template-induced core-shell FeCo@C microspheres as multifunctional electrocatalysts for rechargeable zinc-air batteries. <b>2018</b> , 10, 17021-17029	36
972	Nitrogen-promoted molybdenum dioxide nanosheets for electrochemical hydrogen generation. <b>2018</b> , 6, 12532-12540	29
971	Multifunctional nanostructured electrocatalysts for energy conversion and storage: current status and perspectives. <b>2018</b> , 10, 11241-11280	177
970	Graphene Layer Encapsulation of Non-Noble Metal Nanoparticles as Acid-Stable Hydrogen Evolution Catalysts. <b>2018</b> , 3, 1539-1544	43
969	Highly active and stable electrocatalyst of Ni <sub>2</sub> P nanoparticles supported on 3D ordered macro-/mesoporous Co-N-doped carbon for acidic hydrogen evolution reaction. <b>2018</b> , 6, 12751-12758	31
968	Metal Organic Framework Derived Fe-Doped CoSe <sub>2</sub> Incorporated in Nitrogen-Doped Carbon Hybrid for Efficient Hydrogen Evolution. <b>2018</b> , 6, 8672-8678	40
967	Enhanced electrocatalytic hydrogen generation from water cobalt-doped CuZnSnS nanoparticles.. <b>2018</b> , 8, 20341-20346	20
966	Engineering the Coordination Environment of Single-Atom Platinum Anchored on Graphdiyne for Optimizing Electrocatalytic Hydrogen Evolution. <b>2018</b> , 57, 9382-9386	317
965	Role of Heteroatoms in S,N-Codoped Nanoporous Carbon Materials in CO (Photo)electrochemical Reduction. <b>2018</b> , 11, 2987-2999	17
964	Fabrication of Amorphous Cu <sub>2</sub> O/B Nanofilms on CuCo <sub>2</sub> O <sub>4</sub> Nanoarrays by in Situ Electrochemical Reduction for Efficient Hydrogen Evolution in Alkaline Solution. <b>2018</b> , 2018, 3565-3569	7
963	Nanocarbons and Their Composite Materials as Electrocatalyst for Metal/Air Battery and Water Splitting. <b>2019</b> , 455-496	
962	Kohlenstoffnitridmaterialien für photochemische Zellen zur Wasserspaltung. <b>2019</b> , 131, 6198-6211	12
961	Carbon Nitride Materials for Water Splitting Photoelectrochemical Cells. <b>2019</b> , 58, 6138-6151	141
960	Amorphous 2D materials containing a conjugated-polymer network. <b>2019</b> , 2,	19
959	Multiple roles of a heterointerface in two-dimensional van der Waals heterostructures: insights into energy-related applications. <b>2019</b> , 7, 23577-23603	30
958	Full-Color Chemically Modulated g-C <sub>3</sub> N <sub>4</sub> for White-Light-Emitting Device. <b>2019</b> , 7, 1900775	15

957	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
956	Heterostructured MXene and g-C <sub>3</sub> N <sub>4</sub> for high-rate lithium intercalation. <b>2019</b> , 65, 104030	37
955	Donor-Acceptor Nanocarbon Ensembles to Boost Metal-Free All-pH Hydrogen Evolution Catalysis by Combined Surface and Dual Electronic Modulation. <b>2019</b> , 58, 16217-16222	32
954	Phosphorus Doped MoS <sub>2</sub> Nanosheet Promoted with Nitrogen, Sulfur Dual Doped Reduced Graphene Oxide as an Effective Electrocatalyst for Hydrogen Evolution Reaction. <b>2019</b> , 2, 6184-6194	36
953	Ultrathin Two-Dimensional Metal-Organic-Framework-Derived CoO/Nitrogen and Sulfur Co-doped Ultrathin Porous Carbon Nanoplates for Highly Efficient Water Electrolysis. <b>2019</b> , 6, 3940-3948	5
952	A unique amorphous cobalt-phosphide-boride bifunctional electrocatalyst for enhanced alkaline water-splitting. <b>2019</b> , 259, 118051	68
951	Graphitic carbon nitride nanostructures: Catalysis. <b>2019</b> , 16, 388-424	35
950	Fe <sub>2</sub> O <sub>3</sub> and Co bimetallic decorated nitrogen doped graphene nanomaterial for effective electrochemical water split hydrogen evolution reaction. <b>2019</b> , 849, 113345	6
949	The preparation of Ni/Mo-based ternary electrocatalysts by the self-propagating initiated nitridation reaction and their application for efficient hydrogen production. <b>2019</b> , 11, 17093-17103	11
948	Exploring HER activity on zigzag graphene/h-BN hetero nanoribbon. <b>2019</b> ,	
947	Fluorographdiyne: A Metal-Free Catalyst for Applications in Water Reduction and Oxidation. <b>2019</b> , 131, 14035-14041	20
946	Facile Synthesis of Well-Dispersed NiP on N-Doped Nanomesh Carbon Matrix as a High-Efficiency Electrocatalyst for Alkaline Hydrogen Evolution Reaction. <b>2019</b> , 9,	6
945	Recent progress in the electrochemical ammonia synthesis under ambient conditions. <b>2019</b> , 1, 100011	105
944	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
943	Synthesis, Structure, and Magnetic Properties of B-Doped Fe <sub>3</sub> N@C Magnetic Nanomaterial as Catalyst for the Hydrogen Evolution Reaction. <b>2019</b> , 256, 1900111	3
942	Cr-Dopant Induced Breaking of Scaling Relations in CoFe Layered Double Hydroxides for Improvement of Oxygen Evolution Reaction. <b>2019</b> , 15, e1902373	62
941	Nanowires assembled from iron manganite nanoparticles: Synthesis, characterization, and investigation of electrocatalytic properties for water oxidation reaction. <b>2019</b> , 34, 3231-3239	4
940	Fluorographdiyne: A Metal-Free Catalyst for Applications in Water Reduction and Oxidation. <b>2019</b> , 58, 13897-13903	72

939	Initiating an efficient electrocatalyst for water splitting via valence configuration of cobalt-iron oxide. <b>2019</b> , 258, 117968	47
938	Moving from acridinium to pyridinium: From complex to simple. 2,4,6-Triphenylpyridine and 2,4,6-triphenylpyridinium perchlorate as metal-free electrocatalysts of hydrogen evolution reaction (HER): The influence of the nature of the heteroatom and acid on the pathway HER. <b>2019</b> , 44, 21495-21505	5
937	Modulation of HCHO, H <sub>2</sub> O and H adsorption on AgPd cocatalyst by optimizing of selective exposed facet to enhancing the efficiency of conversion toxic formaldehyde into hydrogen driven by visible light. <b>2019</b> , 375, 493-506	7
936	Catalytically Active Sites on NiP for Efficient Hydrogen Evolution Reaction From Atomic Scale Calculation. <b>2019</b> , 7, 444	10
935	Ni-Co-Mo-O nanosheets decorated with NiCo nanoparticles as advanced electrocatalysts for highly efficient hydrogen evolution. <b>2019</b> , 258, 117953	39
934	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
933	Algorithm screening to accelerate discovery of 2D metal-free electrocatalysts for hydrogen evolution reaction. <b>2019</b> , 7, 19290-19296	31
932	One-Dimensional Single-Chain Nb <sub>2</sub> Se <sub>9</sub> as Efficient Electrocatalyst for Hydrogen Evolution Reaction. <b>2019</b> , 2, 5785-5792	12
931	Photoinduced formation of Cu@Cu <sub>2</sub> O@C plasmonic nanostructures with efficient interfacial charge transfer for hydrogen evolution. <b>2019</b> , 7, 19324-19331	12
930	Atomic carbon chains-mediated carriers transfer over polymeric carbon nitride for efficient photocatalysis. <b>2019</b> , 259, 118027	13
929	Porous TiO <sub>2</sub> /CoS core-branch nanosheet arrays with high electrocatalytic activity for a hydrogen evolution reaction. <b>2019</b> , 30, 404001	11
928	Wrinkled Ni-doped Mo <sub>2</sub> C coating on carbon fiber paper: An advanced electrocatalyst prepared by molten-salt method for hydrogen evolution reaction. <b>2019</b> , 319, 293-301	40
927	Covalently Linked Heterostructures of Phosphorene with MoS <sub>2</sub> /MoSe <sub>2</sub> and Their Remarkable Hydrogen Evolution Reaction Activity. <b>2019</b> , 11, 27780-27787	37
926	Graphdiyne with tunable activity towards hydrogen evolution reaction. <b>2019</b> , 63, 103874	29
925	Fluorescent Nanoparticles Synthesized by Carbon-Nitride-Stabilized Pickering Emulsion Polymerization for Targeted Cancer Cell Imaging. <b>2019</b> , 2, 5127-5135	16
924	Embedded cobalt sulfide/N-doped reduced graphene oxide nanocomposite for high-efficiency hydrogen evolution catalysis. <b>2019</b> , 6, 115508	4
923	Understanding the Phase-Induced Electrocatalytic Oxygen Evolution Reaction Activity on FeOOH Nanostructures. <b>2019</b> , 9, 10705-10711	113
922	Flower-like MOF-derived Co/N-doped carbon composite with remarkable activity and durability for electrochemical hydrogen evolution reaction. <b>2019</b> , 44, 30075-30083	22

921	Atomic-Local Environments of Single-Atom Catalysts: Synthesis, Electronic Structure, and Activity. <b>2019</b> , 9, 1900722	78
920	Dual Graphitic-N Doping in a Six-Membered C-Ring of Graphene-Analogous Particles Enables an Efficient Electrocatalyst for the Hydrogen Evolution Reaction. <b>2019</b> , 58, 16973-16980	28
919	A Minireview on Nickel-Based Heterogeneous Electrocatalysts for Water Splitting. <b>2019</b> , 11, 5913-5928	35
918	Electrochemical CO Reduction to C Products on Single Nickel/Cobalt/Iron-Doped Graphitic Carbon Nitride: A DFT Study. <b>2019</b> , 12, 5126-5132	35
917	Dual Graphitic-N Doping in a Six-Membered C-Ring of Graphene-Analogous Particles Enables an Efficient Electrocatalyst for the Hydrogen Evolution Reaction. <b>2019</b> , 131, 17129-17136	5
916	Tunable In Situ Stress and Spontaneous Microwrinkling of Multiscale Heterostructures. <b>2019</b> , 123, 26041-26046	
915	Modification of Carbon Nitride/Reduced Graphene Oxide van der Waals Heterostructure with Copper Nanoparticles To Improve CO Sensitivity. <b>2019</b> , 11, 41588-41594	8
914	Hierarchical ZnS@C@MoS <sub>2</sub> core-shell nanostructures as efficient hydrogen evolution electrocatalyst for alkaline water electrolysis. <b>2019</b> , 44, 25310-25318	19
913	Oxygen-terminated BiXenes and derived single atom catalysts for the hydrogen evolution reaction. <b>2019</b> , 378, 97-103	22
912	Preparation and electrocatalytic hydrogen evolution properties of nonmetallic functionalized carbon nanofiber catalysts. <b>2019</b> , 6, 115509	1
911	Donor-Acceptor Nanocarbon Ensembles to Boost Metal-Free All-pH Hydrogen Evolution Catalysis by Combined Surface and Dual Electronic Modulation. <b>2019</b> , 131, 16363-16368	6
910	Identification of Catalytic Active Sites in Nitrogen-Doped Carbon for Electrocatalytic Dechlorination of 1,2-Dichloroethane. <b>2019</b> , 9, 10931-10939	21
909	Superficial Hydroxyl and Amino Groups Synergistically Active Polymeric Carbon Nitride for CO <sub>2</sub> Electroreduction. <b>2019</b> , 9, 10983-10989	66
908	Investigating the Integrity of Graphene towards the Electrochemical Hydrogen Evolution Reaction (HER). <b>2019</b> , 9, 15961	21
907	One-Step Controllable Synthesis of Catalytic Ni <sub>4</sub> Mo/MoO <sub>x</sub> /Cu Nanointerfaces for Highly Efficient Water Reduction. <b>2019</b> , 9, 1901454	20
906	Two-Step Hydrothermal Synthesis of CoSe/MoSe <sub>2</sub> as Hydrogen Evolution Electrocatalysts in Acid and Alkaline Electrolytes. <b>2019</b> , 6, 4842-4847	12
905	Ten years of carbon-based metal-free electrocatalysts. <b>2019</b> , 1, 19-31	76
904	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

903	Graphene Nanoarchitectonics: Recent Advances in Graphene-Based Electrocatalysts for Hydrogen Evolution Reaction. <b>2019</b> , 31, e1903415		170
902	Potassium-Ion-Assisted Regeneration of Active Cyano Groups in Carbon Nitride Nanoribbons: Visible-Light-Driven Photocatalytic Nitrogen Reduction. <b>2019</b> , 131, 16797-16803		16
901	Potassium-Ion-Assisted Regeneration of Active Cyano Groups in Carbon Nitride Nanoribbons: Visible-Light-Driven Photocatalytic Nitrogen Reduction. <b>2019</b> , 58, 16644-16650		180
900	Tuning the hydrogen activation reactivity on topological insulator heterostructures. <b>2019</b> , 58, 40-46		27
899	Unusual synergistic effect in layered Ruddlesden-Popper oxide enables ultrafast hydrogen evolution. <i>Nature Communications</i> , <b>2019</b> , 10, 149	17.4	116
898	Atomic and electronic modulation of self-supported nickel-vanadium layered double hydroxide to accelerate water splitting kinetics. <i>Nature Communications</i> , <b>2019</b> , 10, 3899	17.4	194
897	Recent progress in two-dimensional nanomaterials: Synthesis, engineering, and applications. <b>2019</b> , 18, 100133		33
896	Surface Assistant Charge Separation in PEC CuS-Ni/CuO Cathode. <b>2019</b> , 11, 34000-34009		11
895	Role of Hydroxyl Species in Hydrogen Oxidation Reaction: A DFT Study. <b>2019</b> , 123, 23931-23939		21
894	Molecular Modulation of a Molybdenum-Selenium Cluster by Sulfur Substitution To Enhance the Hydrogen Evolution Reaction. <b>2019</b> , 58, 12415-12421		7
893	Nanostructured heterogeneous photo-catalysts for hydrogen production and water splitting: A comprehensive insight. <b>2019</b> , 17, 159-182		30
892	Carbon quantum dot-based composites for energy storage and electrocatalysis: Mechanism, applications and future prospects. <b>2019</b> , 66, 104093		95
891	Defective crystalline molybdenum phosphides as bifunctional catalysts for hydrogen evolution and hydrazine oxidation reactions during water splitting. <b>2019</b> , 6, 2686-2695		11
890	Potential of Raman spectroscopy towards understanding structures of carbon-based materials and perovskites. <b>2019</b> , 2, 417-439		11
889	Electrochemical Growth of Metallic Nanoparticles onto Immobilized Polymer Brush Ionic Liquid as a Hybrid Electrocatalyst for the Hydrogen Evolution Reaction. <b>2019</b> , 11, 38265-38275		6
888	Modulation of Phosphorene for Optimal Hydrogen Evolution Reaction. <b>2019</b> , 11, 37787-37795		24
887	Interfacial charge-transfer transitions enhanced photocatalytic activity of TCNAQ/g-C <sub>3</sub> N <sub>4</sub> organic hybrid material. <b>2019</b> , 255, 126546		4
886	Metal-Oxide-Mediated Subtractive Manufacturing of Two-Dimensional Carbon Nitride for High-Efficiency and High-Yield Photocatalytic H Evolution. <b>2019</b> , 13, 11294-11302		66

- 885 NiS<sub>2</sub>/MoS<sub>2</sub> on carbon cloth as a bifunctional electrocatalyst for overall water splitting. **2019**, 326, 134983 26
- 884 Atomic Ni Anchored Covalent Triazine Framework as High Efficient Electrocatalyst for Carbon Dioxide Conversion. **2019**, 29, 1806884 139
- 883 Theoretical design of a series of 2D TM-CN and TM-CN@graphene (TM = V, Nb and Ta) nanostructures with highly efficient catalytic activity for the hydrogen evolution reaction. **2019**, 21, 1773-1783<sup>18</sup>
- 882 Hydrogen adsorption trends on various metal-doped NiP surfaces for optimal catalyst design. **2018**, 21, 184-191 13
- 881 pH-Universal Water Splitting Catalyst: Ru-Ni Nanosheet Assemblies. **2019**, 11, 492-504 67
- 880 Tailoring Electrocatalytic Properties of Pt Nanoparticles Grown on Ti<sub>3</sub>C<sub>2</sub>TXMXene Surface. **2019**, 166, H54-H62 29
- 879 Novel design of hollow g-CN nanofibers decorated with MoS and S, N-doped graphene for ternary heterostructures. **2019**, 48, 2170-2178 14
- 878 Rational Design of Graphene-Supported Single Atom Catalysts for Hydrogen Evolution Reaction. **2019**, 9, 1803689 147
- 877 Conjugated Carbon Nitride as an Emerging Luminescent Material: Quantum Dots, Thin Films and Their Applications in Imaging, Sensing, Optoelectronic Devices and Photoelectrochemistry. **2019**, 3, 170-179 24
- 876 Oxygen-Functionalized Ultrathin Ti C T MXene for Enhanced Electrocatalytic Hydrogen Evolution. **2019**, 12, 1368-1373 104
- 875 Solid salt confinement effect: An effective strategy to fabricate high crystalline polymer carbon nitride for enhanced photocatalytic hydrogen evolution. **2019**, 246, 349-355 62
- 874 Unique three-dimensional Mo<sub>2</sub>C@MoS<sub>2</sub> heterojunction nanostructure with S vacancies as outstanding all-pH range electrocatalyst for hydrogen evolution. **2019**, 371, 20-26 64
- 873 MOF-derived hollow FeOOH polyhedra anchored with Ni(OH)<sub>2</sub> nanosheets as efficient electrocatalysts for oxygen evolution. **2019**, 301, 258-266 25
- 872 Impact of Interfacial Electron Transfer on Electrochemical CO Reduction on Graphitic Carbon Nitride/Doped Graphene. **2019**, 15, e1804224 56
- 871 One-step controllable synthesis of amorphous (Ni-Fe)<sub>S</sub> /NiFe(OH) hollow microtube/sphere films as superior bifunctional electrocatalysts for quasi-industrial water splitting at large-current-density. **2019**, 246, 337-348 103
- 870 Metal-ion bridged high conductive RGO-M-MoS<sub>2</sub> (M = Fe<sup>3+</sup>, Co<sup>2+</sup>, Ni<sup>2+</sup>, Cu<sup>2+</sup> and Zn<sup>2+</sup>) composite electrocatalysts for photo-assisted hydrogen evolution. **2019**, 246, 129-139 34
- 869 Metal support effects in electrocatalysis at hexagonal boron nitride. **2019**, 55, 628-631 23
- 868 Ruthenium@N-doped graphite carbon derived from carbon foam for efficient hydrogen evolution reaction. **2019**, 55, 965-968 39



867	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
866	Conjugated polymer dots/graphitic carbon nitride nanosheet heterojunctions for metal-free hydrogen evolution photocatalysis. <b>2019</b> , 7, 303-311	40
865	A boron-interstitial doped C <sub>2</sub> N layer as a metal-free electrocatalyst for N <sub>2</sub> fixation: a computational study. <b>2019</b> , 7, 2392-2399	108
864	Boosting electrochemical water splitting via ternary NiMoCo hybrid nanowire arrays. <b>2019</b> , 7, 2156-2164	61
863	Polyoxometalate-assisted formation of CoSe/MoSe <sub>2</sub> heterostructures with enhanced oxygen evolution activity. <b>2019</b> , 7, 3317-3326	61
862	One-Pot Synthesized Pd@N-Doped Graphene: An Efficient Catalyst for Suzuki-Miyaura Couplings. <b>2019</b> , 9, 469	13
861	Electrochemically active novel amorphous carbon (a-C)/Cu <sub>3</sub> P peapod nanowires by low-temperature chemical vapor phosphorization reaction as high efficient electrocatalysts for hydrogen evolution reaction. <b>2019</b> , 318, 374-383	9
860	Engineering multiphase for activating electroactive sites for highly efficient hydrogen evolution: Experimental and theoretical investigation. <b>2019</b> , 44, 13323-13333	2
859	Rationally designed 2D/2D SiC/g-C <sub>3</sub> N <sub>4</sub> photocatalysts for hydrogen production. <b>2019</b> , 9, 3896-3906	22
858	Polypyrrole coated niobium disulfide nanowires as high performance electrocatalysts for hydrogen evolution reaction. <b>2019</b> , 30, 405601	4
857	Grafting Polymers onto Carbon Nitride via Visible-Light-Induced Photofunctionalization. <b>2019</b> , 52, 4989-4996	21
856	The Accelerating World of Graphdiynes. <b>2019</b> , 31, e1804211	55
855	A 2D/2D graphitic carbon nitride/N-doped graphene hybrid as an effective polysulfide mediator in lithium-sulfur batteries. <b>2019</b> , 3, 1807-1815	13
854	Tunable stable operating potential window for high-voltage aqueous supercapacitors. <b>2019</b> , 63, 103848	43
853	Tactile UV- and Solar-Light Multi-Sensing Rechargeable Batteries with Smart Self-Conditioned Charge and Discharge. <b>2019</b> , 131, 9349-9354	4
852	Bio-derived nanoporous activated carbon sheets as electrocatalyst for enhanced electrochemical water splitting. <b>2019</b> , 44, 19995-20006	15
851	3D hierarchical V-Ni-based nitride heterostructure as a highly efficient pH-universal electrocatalyst for the hydrogen evolution reaction. <b>2019</b> , 7, 15823-15830	65
850	Nitrogen-self doped activated carbon nanosheets derived from peanut shells for enhanced hydrogen evolution reaction. <b>2019</b> , 489, 725-733	17

849	Boosting exciton dissociation and molecular oxygen activation by in-plane grafting nitrogen-doped carbon nanosheets to graphitic carbon nitride for enhanced photocatalytic performance. <b>2019</b> , 553, 59-70	15
848	Polyoxometalate-Derived Ultrasmall Pt <sub>2</sub> W/WO <sub>3</sub> Heterostructure Outperforms Platinum for Large-Current-Density H <sub>2</sub> Evolution. <b>2019</b> , 9, 1900597	41
847	High-Performance Hydrogen Evolution by Ru Single Atoms and Nitrided-Ru Nanoparticles Implanted on N-Doped Graphitic Sheet. <b>2019</b> , 9, 1900931	131
846	Charge Polarization from Atomic Metals on Adjacent Graphitic Layers for Enhancing the Hydrogen Evolution Reaction. <b>2019</b> , 131, 9504-9508	1
845	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
844	Agent-assisted VSSe ternary alloy single crystals as an efficient stable electrocatalyst for the hydrogen evolution reaction. <b>2019</b> , 7, 15714-15721	14
843	Photocarving nitrogen vacancies in a polymeric carbon nitride for metal-free oxygen synthesis. <b>2019</b> , 256, 117794	44
842	Building Up a Picture of the Electrocatalytic Nitrogen Reduction Activity of Transition Metal Single-Atom Catalysts. <b>2019</b> , 141, 9664-9672	390
841	Carbon doped honeycomb-like graphitic carbon nitride for photocatalytic hydrogen production. <b>2019</b> , 552, 728-734	21
840	Highly active and durable carbon electrocatalyst for nitrate reduction reaction. <b>2019</b> , 161, 126-135	65
839	Tailoring Electronic Structure of Atomically Dispersed Metal N <sub>3</sub> S <sub>1</sub> Active Sites for Highly Efficient Oxygen Reduction Catalysis. <b>2019</b> , 1, 139-146	19
838	Unravelling the synergy effects of defect-rich 1T-MoS <sub>2</sub> /carbon nanotubes for the hydrogen evolution reaction by experimental and calculational studies. <b>2019</b> , 3, 2100-2110	15
837	An efficient palm waste derived hierarchical porous carbon for electrocatalytic hydrogen evolution reaction. <b>2019</b> , 152, 188-197	19
836	Role of defects on the catalytic property of 2D black arsenic for hydrogen evolution reaction. <b>2019</b> , 12, 075502	6
835	Single Pt atom decorated graphitic carbon nitride as an efficient photocatalyst for the hydrogenation of nitrobenzene into aniline. <b>2019</b> , 12, 1817-1823	61
834	Revealing important role of graphitic carbon nitride surface catalytic activity in photocatalytic hydrogen evolution by using different carbon co-catalysts. <b>2019</b> , 491, 236-244	12
833	Three-Dimensional Functionalized Carbon Nanotubes/Graphitic Carbon Nitride Hybrid Composite as the Sulfur Host for High-Performance Lithium Sulfur Batteries. <b>2019</b> , 123, 15924-15934	7
832	New vesicular carbon-based rhenium phosphides with all-pH range electrocatalytic hydrogen evolution activity. <b>2019</b> , 256, 117851	22

831	Rationally engineered active sites for efficient and durable hydrogen generation. <i>Nature Communications</i> , <b>2019</b> , 10, 2281	17.4	34
830	Carbon vacancy defect-activated Pt cluster for hydrogen generation. <b>2019</b> , 7, 15364-15370		29
829	Synthesis of RGO-Supported Molybdenum Carbide (Mo <sub>2</sub> C-RGO) for Hydrogen Evolution Reaction under the Function of Poly(Ionic Liquid). <b>2019</b> , 58, 8996-9005		6
828	Activity enhancement of layered cobalt hydroxide nanocones by tuning interlayer spacing and phosphidation for electrocatalytic water oxidation in neutral solutions. <b>2019</b> , 6, 1744-1752		6
827	RGO induced one-dimensional bimetallic carbide nanorods: An efficient and pH-universal hydrogen evolution reaction electrocatalyst. <b>2019</b> , 62, 85-93		37
826	Tactile UV- and Solar-Light Multi-Sensing Rechargeable Batteries with Smart Self-Conditioned Charge and Discharge. <b>2019</b> , 58, 9248-9253		30
825	Nanoporous Ni <sub>3</sub> S <sub>2</sub> Film on Ni Foam as Highly Efficient Electrocatalyst for Hydrogen Evolution in Acidic Electrolyte. <b>2019</b> , 55, 88-96		4
824	Defect-Rich Heterogeneous MoS <sub>2</sub> /NiS Nanosheets Electrocatalysts for Efficient Overall Water Splitting. <b>2019</b> , 6, 1900246		278
823	Charge Polarization from Atomic Metals on Adjacent Graphitic Layers for Enhancing the Hydrogen Evolution Reaction. <b>2019</b> , 58, 9404-9408		50
822	Boosting LiB battery by rational design of freestanding cathode with enriched anchoring and catalytic N-sites carbonaceous host. <b>2019</b> , 150, 216-223		33
821	The Holy Grail in Platinum-Free Electrocatalytic Hydrogen Evolution: Molybdenum-Based Catalysts and Recent Advances. <b>2019</b> , 6, 3570-3589		27
820	Computational Discovery and Design of MXenes for Energy Applications: Status, Successes, and Opportunities. <b>2019</b> , 11, 24885-24905		65
819	Quasi-one-dimensional Mo chains for efficient hydrogen evolution reaction. <b>2019</b> , 61, 194-200		27
818	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
817	Local Electronic Structure Perspectives of Nanoparticle Growth: The Case of MgO. <b>2019</b> , 4, 7140-7150		9
816	Deflated balloon-like nitrogen-rich sulfur-containing hierarchical porous carbons for high-rate supercapacitors. <b>2019</b> , 484, 716-725		4
815	Molybdenum Selenide Electrocatalysts for Electrochemical Hydrogen Evolution Reaction. <b>2019</b> , 6, 3530-3548		42
814	Decorating WSe <sub>2</sub> nanosheets with ultrafine Ru nanoparticles for boosting electrocatalytic hydrogen evolution in alkaline electrolytes. <b>2019</b> , 6, 1382-1387		15

813	Anion-Modulated HER and OER Activities of 3D Ni-V-Based Interstitial Compound Heterojunctions for High-Efficiency and Stable Overall Water Splitting. <b>2019</b> , 31, e1901174	282
812	Transition Metal Dichalcogenide Anchored in 3D Nickel Framework with Graphene Support for Efficient Electrocatalytic Hydrogen Evolution. <b>2019</b> , 3, 1800168	5
811	Hierarchical NiO@N-Doped Carbon Microspheres with Ultrathin Nanosheet Subunits as Excellent Photocatalysts for Hydrogen Evolution. <b>2019</b> , 15, e1901024	54
810	Regulating the allocation of N and P in codoped graphene via supramolecular control to remarkably boost hydrogen evolution. <b>2019</b> , 12, 2697-2705	45
809	B3S monolayer: prediction of a high-performance anode material for lithium-ion batteries. <b>2019</b> , 7, 12706-12712	29
808	Highly conductive and metallic cobalt-nickel selenide nanorods supported on Ni foam as an efficient electrocatalyst for alkaline water splitting. <b>2019</b> , 11, 7959-7966	72
807	NiN/NF as Bifunctional Catalysts for Both Hydrogen Generation and Urea Decomposition. <b>2019</b> , 11, 13168-13175	75
806	A Combined experimental and theoretical study of the accelerated hydrogen evolution kinetics over wide pH range on porous transition metal doped tungsten phosphide electrocatalysts. <b>2019</b> , 251, 162-167	39
805	Tuning the active sites in the cobalt-based nitrogen-doped carbon by zinc for enhancing hydrogen evolution reaction. <b>2019</b> , 789, 100-107	9
804	Cobalt based metal-organic frameworks and their derivatives for electrochemical energy conversion and storage. <b>2019</b> , 370, 37-59	63
803	High hydrogen evolution performance of Al doped CoP <sub>3</sub> nanowires arrays with high stability in acid solution superior to Pt/C. <b>2019</b> , 44, 8062-8069	18
802	Low-power CO <sub>2</sub> laser-fabricated catalyst for the remediation of Reactive Red-45: Intense product analysis using LC-MS and HPIC. <b>2019</b> , 283, 123-132	4
801	Cobalt Phosphate Nanoparticles Embedded Nitrogen and Phosphorus-Codoped Graphene Aerogels as Effective Electrocatalysts for Oxygen Reduction. <b>2019</b> , 6,	4
800	Efficient carbon-based catalyst derived from natural cattail fiber for hydrogen evolution reaction. <b>2019</b> , 274, 207-214	15
799	Hierarchical Heterostructured Mo <sub>2</sub> C/Mo <sub>3</sub> Co <sub>3</sub> C Bouquet-like Nanowire Arrays: An Efficient Electrocatalyst for Hydrogen Evolution Reaction. <b>2019</b> , 7, 7294-7303	28
798	Ultrathin Black Phosphorus-on-Nitrogen Doped Graphene for Efficient Overall Water Splitting: Dual Modulation Roles of Directional Interfacial Charge Transfer. <b>2019</b> , 141, 4972-4979	158
797	Intrinsic Carbon-Defect-Driven Electrocatalytic Reduction of Carbon Dioxide. <b>2019</b> , 31, e1808276	155
796	3D Hierarchical Porous Graphene-Based Energy Materials: Synthesis, Functionalization, and Application in Energy Storage and Conversion. <b>2019</b> , 2, 332-371	59

795	Investigation of the correlation between the phase structure and activity of NiMoD derived electrocatalysts for the hydrogen evolution reaction. <b>2019</b> , 7, 10338-10345	14
794	Carbon-Based Substrates for Highly Dispersed Nanoparticle and Even Single-Atom Electrocatalysts. <b>2019</b> , 3, 1900050	52
793	Theoretical investigation on the high HER catalytic activity of 2D layered GeP3 nanomaterials and its further enhancement by applying the surface strain or coupling with graphene. <b>2019</b> , 481, 272-280	15
792	Mo-doped boron nitride monolayer as a promising single-atom electrocatalyst for CO conversion. <b>2019</b> , 10, 540-548	25
791	Interfacial engineering of cobalt sulfide/graphene hybrids for highly efficient ammonia electrosynthesis. <b>2019</b> , 116, 6635-6640	175
790	Transition Metal (Fe, Co and Ni) Carbide/Nitride (M <sub>2</sub> C/N) Nanocatalysts: Structure and Electrocatalytic Applications. <b>2019</b> , 11, 2780-2792	27
789	Recent Advances in Growth and Modification of Graphene-Based Energy Materials: From Chemical Vapor Deposition to Reduction of Graphene Oxide. <b>2019</b> , 3, 1900071	18
788	Rational nanostructure design of graphitic carbon nitride for photocatalytic applications. <b>2019</b> , 7, 11584-11612	109
787	Modification of Layered Graphitic Carbon Nitride by Nitrogen Plasma for Improved Electrocatalytic Hydrogen Evolution. <b>2019</b> , 9,	11
786	In-situ local phase-transitioned MoSe in LaSrCoO heterostructure and stable overall water electrolysis over 1000 hours. <i>Nature Communications</i> , <b>2019</b> , 10, 1723	17.4 91
785	Carbon nitride supported NiCoO nanoparticles with strong interfacial interaction to enhance the hydrolysis of ammonia borane.. <b>2019</b> , 9, 11552-11557	8
784	Defect engineering in earth-abundant electrocatalysts for CO <sub>2</sub> and N <sub>2</sub> reduction. <b>2019</b> , 12, 1730-1750	293
783	MOF-derived cobalt-embedded nitrogen-doped mesoporous carbon leaf for efficient hydrogen evolution reaction in both acidic and alkaline media. <b>2019</b> , 44, 11838-11847	9
782	Ternary metal sulfides for electrocatalytic energy conversion. <b>2019</b> , 7, 9386-9405	135
781	Construction of g-C <sub>3</sub> N <sub>4</sub> /BCN two-dimensional heterojunction photoanode for enhanced photoelectrochemical water splitting. <b>2019</b> , 44, 10498-10507	15
780	Tuning Interfacial Structures for Better Catalysis of Water Electrolysis. <b>2019</b> , 25, 9799-9815	23
779	Polymeric Semiconductors as Efficient Photocatalysts for Water Purification and Solar Hydrogen Production. <b>2019</b> , 125-153	1
778	P doped MoS nanoplates embedded in nitrogen doped carbon nanofibers as an efficient catalyst for hydrogen evolution reaction. <b>2019</b> , 547, 291-298	25

- 777 Single-atom ruthenium based catalyst for enhanced hydrogen evolution. **2019**, 249, 91-97 96
- 776 A first blue fluorescence composite film based on graphitic carbon nitride nanosheets/polyoxometalate for application in reversible electroluminescence switching. **2019**, 7, 3253-3262 6
- 775 Millisecond synthesis of CoS nanoparticles for highly efficient overall water splitting. **2019**, 12, 2259-2267 57
- 774 Chemical Approaches to Carbon-Based Metal-Free Catalysts. **2019**, 31, e1804863 53
- 773 Single Layer 2D Crystals for Electrochemical Applications of Ion Exchange Membranes and Hydrogen Evolution Catalysts. **2019**, 6, 1801838 12
- 772 Carbon Nanomaterials for Energy and Biorelated Catalysis: Recent Advances and Looking Forward. **2019**, 5, 389-408 50
- 771 Graphene-based materials for electrochemical CO<sub>2</sub> reduction. **2019**, 30, 168-182 57
- 770 Tailoring the geometric and electronic structure of tungsten oxide with manganese or vanadium doping toward highly efficient electrochemical and photoelectrochemical water splitting. **2019**, 7, 6161-6172 38
- 769 Surface chemical-functionalization of ultrathin two-dimensional nanomaterials for electrocatalysis. **2019**, 12, 250-268 32
- 768 In situ nanoarchitecturing and active-site engineering toward highly efficient carbonaceous electrocatalysts. **2019**, 59, 207-215 42
- 767 Facile synthesis, characterization and DFT studies of a nanostructured nickel-molybdenum-phosphorous planar electrode as an active electrocatalyst for the hydrogen evolution reaction. **2019**, 11, 9353-9361 22
- 766 Bulk  $\alpha$ -T/2H-MoS<sub>2</sub> with Tunable Phases and Residual S, N Co-Doped Carbon as a Highly Active and Durable Catalyst for Hydrogen Evolution. **2019**, 2, 2022-2033 11
- 765 In situ synthesized low-PtCo@porous carbon catalyst for highly efficient hydrogen evolution. **2019**, 7, 6543-6551 33
- 764 Constituent-tunable ternary CoMSe (M = Te, S) sandwich-like graphitized carbon-based composites as highly efficient electrocatalysts for water splitting. **2019**, 11, 6108-6119 8
- 763 Fabrication of Superior Single-Atom Catalysts toward Diverse Electrochemical Reactions. **2019**, 3, 1800497 68
- 762 Overall noble metal free Ni and Fe doped Cu<sub>2</sub>ZnSnS<sub>4</sub> (CZTS) bifunctional electrocatalytic systems for enhanced water splitting reactions. **2019**, 44, 8144-8155 24
- 761 Atomically engineering activation sites onto metallic 1T-MoS catalysts for enhanced electrochemical hydrogen evolution. *Nature Communications*, **2019**, 10, 982 17.4 180
- 760 Two-Dimensional Materials on the Rocks: Positive and Negative Role of Dopants and Impurities in Electrochemistry. **2019**, 13, 2681-2728 46

759	Catalytic Activity Origin and Design Principles of Graphitic Carbon Nitride Electrocatalysts for Hydrogen Evolution. <b>2019</b> , 6,	34
758	Nitrogen and sulfur-codoped porous carbon derived from a BSA/ionic liquid polymer complex: multifunctional electrode materials for water splitting and supercapacitors.. <b>2019</b> , 9, 5189-5196	7
757	Deciphering Z-scheme Charge Transfer Dynamics in Heterostructure NiFe-LDH/N-rGO/g-CN Nanocomposite for Photocatalytic Pollutant Removal and Water Splitting Reactions. <b>2019</b> , 9, 2458	94
756	Fabrication of multiporphyrin@g-C3N4 nanocomposites via Pd(II)-directed layer-by-layer assembly for enhanced visible-light photocatalytic activity. <b>2019</b> , 478, 1027-1036	12
755	Defect chemistry in 2D materials for electrocatalysis. <b>2019</b> , 12, 215-238	62
754	Photocatalytic performance of few-layer graphitic CN: enhanced by interlayer coupling. <b>2019</b> , 11, 4101-4107	23
753	Fabrication of dispersive $\text{Co}(\text{OH})_2$ nanosheets on graphene nanoribbons for boosting their oxygen evolution performance. <b>2019</b> , 54, 7692-7701	10
752	Few-layered MoS <sub>2</sub> vertically aligned on 3D interconnected porous carbon nanosheets for hydrogen evolution. <b>2019</b> , 248, 357-365	46
751	Ag-Cd-B-P ternary alloy with efficient electrocatalytic activity towards hydrogen evolution reaction (HER). <b>2019</b> , 577, 012122	1
750	Effective immobilization of nanoscale Pd on a carbon hybrid for enhanced electrocatalytic performances: stabilization mechanism investigations. <b>2019</b> , 11, 21934-21942	1
749	S-Edge-rich MoS arrays vertically grown on carbon aerogels as superior bifunctional HER/OER electrocatalysts. <b>2019</b> , 11, 20284-20294	22
748	Engineering the coupling interface of rhombic dodecahedral NiCoP/C@FeOOH nanocages toward enhanced water oxidation. <b>2019</b> , 11, 19959-19968	25
747	Accurate K-edge X-ray photoelectron and absorption spectra of g-CN nanosheets by first-principles simulations and reinterpretations. <b>2019</b> , 21, 22819-22830	29
746	Recent advances in two-dimensional materials and their nanocomposites in sustainable energy conversion applications. <b>2019</b> , 11, 21622-21678	109
745	One-Step Hydrothermal Synthesis of P25 @ Few Layered MoS Nanosheets toward Enhanced Bi-catalytic Activities: Photocatalysis and Electrocatalysis. <b>2019</b> , 9,	4
744	Mesoporous graphitic carbon nitride synthesized using biotemplate as a high-performance electrode material for supercapacitor and electrocatalyst for hydrogen evolution reaction in acidic medium. <b>2019</b> , 26, 101032	10
743	Noble metal-free two dimensional carbon-based electrocatalysts for water splitting. <b>2019</b> , 1,	15
742	Phytic acid-guided ultra-thin N,P co-doped carbon coated carbon nanotubes for efficient all-pH electrocatalytic hydrogen evolution. <b>2019</b> , 11, 23027-23034	16

741	Cobalt Nitride Supported on Nickel Foam as Bifunctional Catalyst Electrodes for Urea Electrolysis-Assisted Hydrogen Generation. <b>2019</b> , 14, 1950152	2
740	Hierarchical Nanoroll-Like MoS <sub>2</sub> /Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> hybrid with high electrocatalytic hydrogen evolution activity. <b>2019</b> , 241, 89-94	145
739	CdS nanospheres hybridized with graphitic C <sub>3</sub> N <sub>4</sub> for effective photocatalytic hydrogen generation under visible light irradiation. <b>2019</b> , 33, e4671	8
738	Fundamental Mechanisms of Reversible Dehydrogenation of Formate on N-Doped Graphene-Supported Pd Nanoparticles. <b>2019</b> , 123, 1539-1549	16
737	Sustainable Carbonaceous Materials Derived from Biomass as Metal-Free Electrocatalysts. <b>2019</b> , 31, e1805718	66
736	MoS <sub>x</sub> @NiO Composite Nanostructures: An Advanced Nonprecious Catalyst for Hydrogen Evolution Reaction in Alkaline Media. <b>2019</b> , 29, 1807562	59
735	Ammonia Synthesis Under Ambient Conditions: Selective Electroreduction of Dinitrogen to Ammonia on Black Phosphorus Nanosheets. <b>2019</b> , 131, 2638-2642	121
734	S-Doped MoP Nanoporous Layer Toward High-Efficiency Hydrogen Evolution in pH-Universal Electrolyte. <b>2019</b> , 9, 651-659	106
733	Construction of Ce-MOF@COF hybrid nanostructure: Label-free aptasensor for the ultrasensitive detection of oxytetracycline residues in aqueous solution environments. <b>2019</b> , 127, 92-100	114
732	Chimney effect of the interface in metal oxide/metal composite catalysts on the hydrogen evolution reaction. <b>2019</b> , 245, 122-129	81
731	Ammonia Synthesis Under Ambient Conditions: Selective Electroreduction of Dinitrogen to Ammonia on Black Phosphorus Nanosheets. <b>2019</b> , 58, 2612-2616	294
730	Killing Two Birds with One Stone: A Highly Active Tubular Carbon Catalyst with Effective N Doping for Oxygen Reduction and Hydrogen Evolution Reactions. <b>2019</b> , 149, 486-495	10
729	Borocarbonitrides, B <sub>x</sub> C <sub>y</sub> N <sub>z</sub> , 2D Nanocomposites with Novel Properties. <b>2019</b> , 92, 441-468	130
728	Ultrahigh length-to-diameter ratio nickel phosphide nanowires as pH-wide electrocatalyst for efficient hydrogen evolution. <b>2019</b> , 298, 943-949	16
727	Understanding Charge Transport in Carbon Nitride for Enhanced Photocatalytic Solar Fuel Production. <b>2019</b> , 52, 248-257	65
726	Doping of Carbon Materials for Metal-Free Electrocatalysis. <b>2019</b> , 31, e1804672	223
725	Catalysis with Two-Dimensional Materials Confining Single Atoms: Concept, Design, and Applications. <b>2019</b> , 119, 1806-1854	442
724	Applications of 2D MXenes in energy conversion and storage systems. <b>2019</b> , 48, 72-133	878



723	Introduction to Catalysis. <b>2019</b> , 1-21	16
722	Sp <sup>2</sup> -carbon dominant carbonaceous materials for energy conversion and storage. <b>2019</b> , 137, 1-37	18
721	The Absence and Importance of Operando Techniques for Metal-Free Catalysts. <b>2019</b> , 31, e1805609	18
720	Carbon-Based Metal-Free Catalysts for Key Reactions Involved in Energy Conversion and Storage. <b>2019</b> , 31, e1801526	184
719	Design of active bifunctional electrocatalysts using single atom doped transition metal dichalcogenides. <b>2019</b> , 471, 545-552	45
718	Heterogeneous Co <sub>N</sub> /C Electrocatalysts with Controlled Cobalt Site Densities for the Hydrogen Evolution Reaction: Structure-Activity Correlations and Kinetic Insights. <b>2019</b> , 9, 83-97	82
717	Pressure-controlled chemical vapor deposition of graphene as catalyst for solar hydrogen evolution reaction. <b>2019</b> , 335, 395-401	4
716	Graphitic carbon nitride QDs impregnated biocompatible agarose cartridge for removal of heavy metals from contaminated water samples. <b>2019</b> , 367, 629-638	44
715	Three-Dimensional Nanoporous CoSP Pentlandite as a Bifunctional Electrocatalyst for Overall Neutral Water Splitting. <b>2019</b> , 11, 3880-3888	47
714	Sub-5 nm Ultra-Fine FeP Nanodots as Efficient Co-Catalysts Modified Porous g-CN for Precious-Metal-Free Photocatalytic Hydrogen Evolution under Visible Light. <b>2019</b> , 11, 5651-5660	162
713	Biomolecule-derived N/S co-doped CNT-graphene hybrids exhibiting excellent electrochemical activities. <b>2019</b> , 413, 408-417	60
712	Heterostructured MoC-MoP/N-doped carbon nanofibers as efficient electrocatalysts for hydrogen evolution reaction. <b>2019</b> , 299, 708-716	31
711	Surfactant-assisted hydrothermal synthesis of nitrogen doped Mo <sub>2</sub> C@C composites as highly efficient electrocatalysts for hydrogen evolution reaction. <b>2019</b> , 44, 3702-3710	35
710	Theoretical Expectation and Experimental Implementation of In Situ Al-Doped CoS <sub>2</sub> Nanowires on Dealloying-Derived Nanoporous Intermetallic Substrate as an Efficient Electrocatalyst for Boosting Hydrogen Production. <b>2019</b> , 9, 1489-1502	72
709	Polymer-Based Synthetic Routes to Carbon-Based Metal-Free Catalysts. <b>2019</b> , 31, e1804626	26
708	Photoinduced composite of Pt decorated Ni(OH) <sub>2</sub> as strongly synergetic cocatalyst to boost H <sub>2</sub> O activation for photocatalytic overall water splitting. <b>2019</b> , 243, 253-261	69
707	Borocarbonitrides as Metal-Free Catalysts for the Hydrogen Evolution Reaction. <b>2019</b> , 31, e1803668	74
706	Ni-W nanostructure well-marked by Ni selective etching for enhanced hydrogen evolution reaction. <b>2019</b> , 44, 880-894	10

705	A Biomass-Derived Carbon-Based Electrocatalyst for Efficient N Fixation to NH under Ambient Conditions. <b>2019</b> , 25, 1914-1917	51
704	EMo <sub>2</sub> C/N, P-co-doped carbon as highly efficient catalyst for hydrogen evolution reaction. <b>2019</b> , 54, 4589-4600	11
703	Guiding Principles for Designing Highly Efficient Metal-Free Carbon Catalysts. <b>2019</b> , 31, e1805252	74
702	Alcohol Oxidation and Hydrogen Evolution. <b>2019</b> , 27, 253-301	10
701	Multimetal Borides Nanochains as Efficient Electrocatalysts for Overall Water Splitting. <b>2019</b> , 15, e1804212	83
700	Nitrogen-doped carbon materials as a promising platform toward the efficient catalysis for hydrogen generation. <b>2019</b> , 571, 25-41	41
699	Layered by layered Ni-Mn-LDH/g-C <sub>3</sub> N <sub>4</sub> nanohybrid for multi-purpose photo/electrocatalysis: Morphology controlled strategy for effective charge carriers separation. <b>2019</b> , 242, 485-498	97
698	Recent progress on graphene-analogous 2D nanomaterials: Properties, modeling and applications. <b>2019</b> , 100, 99-169	160
697	Electronic and Structural Engineering of Carbon-Based Metal-Free Electrocatalysts for Water Splitting. <b>2019</b> , 31, e1803625	163
696	Single-atom supported on graphene grain boundary as an efficient electrocatalyst for hydrogen evolution reaction. <b>2019</b> , 194, 58-63	50
695	Hydrogen Production Through Water Splitting Using Nanomaterials Under Solar Energy. <b>2020</b> , 132-135	1
694	Engineering the HER catalytic behavior of heteroatom-doped molybdenum disulfide via versatile partial cation exchange. <b>2020</b> , 41, 15-19	7
693	Efficient electrochemical reduction of nitrobenzene by nitrogen doped porous carbon. <b>2020</b> , 238, 124636	13
692	Structural, electronic and photocatalytic properties of g-C <sub>3</sub> N <sub>4</sub> with intrinsic defects: A first-principles hybrid functional investigation. <b>2020</b> , 499, 143994	11
691	First-row transition metal polypyridine complexes that catalyze proton to hydrogen reduction. <b>2020</b> , 402, 213079	35
690	Borate crosslinking synthesis of structure tailored carbon-based bifunctional electrocatalysts directly from guar gum hydrogels for efficient overall water splitting. <b>2020</b> , 157, 153-163	14
689	Nanocarbon-Based Hybrids as Electrocatalysts for Hydrogen and Oxygen Evolution From Water Splitting. <b>2020</b> , 379-418	2
688	Mechanistic Study of Monolayer NiP <sub>2</sub> (100) toward Solar Hydrogen Production. <b>2020</b> , 4, 1900360	3

687	Single-atoms supported (Fe, Co, Ni, Cu) on graphitic carbon nitride for CO <sub>2</sub> adsorption and hydrogenation to formic acid: First-principles insights. <b>2020</b> , 499, 143928	24
686	Uncovering the electrochemical mechanisms for hydrogen evolution reaction of heteroatom doped M <sub>2</sub> C MXene (M = Ti, Mo). <b>2020</b> , 500, 143987	47
685	Doping reduced graphene oxide and graphitic carbon nitride hybrid for dual functionality: High performance supercapacitance and hydrogen evolution reaction. <b>2020</b> , 856, 113503	16
684	Particulate Photocatalysts for Light-Driven Water Splitting: Mechanisms, Challenges, and Design Strategies. <b>2020</b> , 120, 919-985	765
683	Stimuli-responsive anisotropic actuation of melem-formaldehyde polymer. <b>2020</b> , 7, 149-156	5
682	Nitrogen-rich carbon-supported ultrafine MoC nanoparticles for the hydrotreatment of oleic acid into diesel-like hydrocarbons. <b>2020</b> , 382, 122464	17
681	Charge Transfer Modulated Activity of Carbon-Based Electrocatalysts. <b>2020</b> , 10, 1901227	93
680	Regulating electron density of NiFe-P nanosheets electrocatalysts by a trifle of Ru for high-efficient overall water splitting. <b>2020</b> , 263, 118324	81
679	Understanding oxygen vacancies in disorder-engineered surface and subsurface of CaTiO <sub>3</sub> nanosheets on photocatalytic hydrogen evolution. <b>2020</b> , 267, 118378	42
678	Porous organic polymer derived metal-free carbon composite as an electrocatalyst for CO <sub>2</sub> reduction and water splitting. <b>2020</b> , 106, 183-190	8
677	Assembling amorphous (Fe-Ni)Co -OH/Ni <sub>3</sub> S <sub>2</sub> nanohybrids with S-vacancy and interfacial effects as an ultra-highly efficient electrocatalyst: Inner investigation of mechanism for alkaline water-to-hydrogen/oxygen conversion. <b>2020</b> , 263, 118338	34
676	Ultrathin nickel phosphide nanosheet aerogel electrocatalysts derived from Ni-alginate for hydrogen evolution reaction. <b>2020</b> , 817, 152727	5
675	Enhanced hydrogen evolution reaction catalyzed by carbon-rich Mo <sub>4.8</sub> Si <sub>3</sub> C <sub>0.6</sub> /C/SiC nanocomposites via a PDC approach. <b>2020</b> , 103, 1385-1395	3
674	Selenium-Doped Hierarchically Porous Carbon Nanosheets as an Efficient Metal-Free Electrocatalyst for CO <sub>2</sub> Reduction. <b>2020</b> , 30, 1906194	32
673	Graphene-cobalt based oxygen electrocatalysts. <b>2020</b> , 358, 184-195	2
672	Recent Advances in Electrocatalytic Hydrogen Evolution Using Nanoparticles. <b>2020</b> , 120, 851-918	722
671	Tuning the selectivity of photoreduction of CO <sub>2</sub> to syngas over Pd/layered double hydroxide nanosheets under visible light up to 600nm. <b>2020</b> , 46, 1-7	26
670	Molten salt strategy to synthesize alkali metal-doped Co <sub>9</sub> S <sub>8</sub> nanoparticles embedded, N, S co-doped mesoporous carbon as hydrogen evolution electrocatalyst. <b>2020</b> , 45, 6006-6014	12

669	Atomically dispersed ruthenium sites on whisker-like secondary microstructure of porous carbon host toward highly efficient hydrogen evolution. <b>2020</b> , 8, 3203-3210	14
668	Designing Atomic Active Centers for Hydrogen Evolution Electrocatalysts. <b>2020</b> , 59, 20794-20812	136
667	Structure Engineering of MoS via Simultaneous Oxygen and Phosphorus Incorporation for Improved Hydrogen Evolution. <b>2020</b> , 16, e1905738	61
666	Synthesis and Characterization of Ag@Fe <sub>3</sub> O <sub>4</sub> Hetero Nanoparticles: A Highly Active Catalyst for Hydrogen Evolution Reactions. <b>2020</b> , 30, 1002-1007	4
665	Efficient electroreduction of CO <sub>2</sub> to CO by Ag-decorated S-doped g-C <sub>3</sub> N <sub>4</sub> /CNT nanocomposites at industrial scale current density. <b>2020</b> , 12, 100176	25
664	Water dissociation and hydrogen evolution on the surface of Fe-based bulk metallic glasses. <b>2020</b> , 22, 700-708	4
663	Recent advances in ruthenium-based electrocatalysts for the hydrogen evolution reaction. <b>2020</b> , 5, 43-56	101
662	Complementary behaviour of EDL and HER activity in functionalized graphene nanoplatelets. <b>2020</b> , 12, 1790-1800	5
661	First-principles investigation of the electronic properties of the BiO(101)/BiVO(010) heterojunction towards more efficient solar water splitting. <b>2020</b> , 22, 2449-2456	12
660	Charge-compensated co-doping of graphdiyne with boron and nitrogen to form metal-free electrocatalysts for the oxygen reduction reaction. <b>2020</b> , 22, 1493-1501	14
659	High-purity pyrrole-type FeN <sub>4</sub> sites as a superior oxygen reduction electrocatalyst. <b>2020</b> , 13, 111-118	158
658	Mo <sub>2</sub> C-embedded biomass-derived honeycomb-like nitrogen-doped carbon nanosheet/graphene aerogel films for highly efficient electrocatalytic hydrogen evolution. <b>2020</b> , 44, 1147-1156	12
657	Applying surface strain and coupling with pure or N/B-doped graphene to successfully achieve high HER catalytic activity in 2D layered SnP <sub>3</sub> -based nanomaterials: a first-principles investigation. <b>2020</b> , 7, 647-658	14
656	Self-growth NiP nanosheet arrays with cationic vacancy defects as a highly efficient bifunctional electrocatalyst for overall water splitting. <b>2020</b> , 561, 638-646	18
655	Two-Dimensional Hierarchical Fe <sub>3</sub> N <sub>4</sub> Electrocatalyst for Zn-Air Batteries with Ultrahigh Specific Capacity. <b>2020</b> , 2, 35-41	16
654	Pt decorated POMOF-derived constructions for efficient electrocatalytic hydrogen evolution. <b>2020</b> , 12, 3902-3906	11
653	Porous PtRh <sub>2</sub> nanotubes: an alleviated poisoning effect for ethanol electrooxidation. <b>2020</b> , 7, 625-630	11
652	W doping dominated NiO/NiS interfaced nanosheets for highly efficient overall water splitting. <b>2020</b> , 562, 363-369	20

651	Nanomesh-Structured Graphitic Carbon Nitride Polymer for Effective Capture and Photocatalytic Elimination of Bacteria. <b>2020</b> , 12, 1334-1340	9
650	Porous coordination polymer-derived ultrasmall CoP encapsulated in nitrogen-doped carbon for efficient hydrogen evolution in both acidic and basic media. <b>2020</b> , 45, 1729-1737	12
649	Solid-solution alloy nanoclusters of the immiscible gold-rhodium system achieved by a solid ligand-assisted approach for highly efficient catalysis. <b>2020</b> , 13, 105-111	10
648	Porous carbon fibers for effective hydrogen evolution. <b>2020</b> , 506, 144955	6
647	K <sup>+</sup> -induced crystallization of polymeric carbon nitride to boost its photocatalytic activity for H <sub>2</sub> evolution and hydrogenation of alkenes. <b>2020</b> , 268, 118457	36
646	Transition Metal Selenides for Electrocatalytic Hydrogen Evolution Reaction. <b>2020</b> , 7, 31-54	46
645	Fabrication of NiCo-Based Heterometallo-Supramolecular Polymer Films and the Study of Electron Transfer Kinetics for the Nonenzymatic Electrochemical Detection of Nitrite. <b>2020</b> , 2, 273-284	17
644	Theoretical models for hydrogen evolution reaction at combined Mo <sub>2</sub> C and N-doped graphene. <b>2020</b> , 381, 234-247	15
643	3D Carbon Materials for Efficient Oxygen and Hydrogen Electrocatalysis. <b>2020</b> , 10, 1902494	56
642	Thermodynamically Stable Mesoporous C <sub>3</sub> N <sub>4</sub> and C <sub>2</sub> N <sub>2</sub> with Ordered Structure and Their Excellent Performance for Oxygen Reduction Reaction. <b>2020</b> , 16, e1903572	33
641	N, K Co-activated biochar-derived molybdenum carbide as efficient electrocatalysts for hydrogen evolution. <b>2020</b> , 509, 144879	8
640	Unifying the diffusion coefficients of lanthanides and actinides in binary molten salt mixtures: A data review. <b>2020</b> , 297, 112106	1
639	Low Dimensional Carbon-Based Catalysts for Efficient Photocatalytic and Photo/Electrochemical Water Splitting Reactions. <b>2019</b> , 13,	15
638	Improving Electrochemical Hydrogen Evolution of Ag@CN Nanocomposites by Synergistic Effects with Rich Proteins. <b>2020</b> , 12, 2207-2215	14
637	Modification of the ultrasonication derived-g-C <sub>3</sub> N <sub>4</sub> nanosheets/quantum dots by MoS <sub>2</sub> nanostructures to improve electrocatalytic hydrogen evolution reaction. <b>2020</b> , 45, 33512-33520	5
636	Metal-free photo- and electro-catalysts for hydrogen evolution reaction. <b>2020</b> , 8, 23674-23698	21
635	Host-Guest Thin Films by Confining Ultrafine Pt/C QDs into Metal-Organic Frameworks for Highly Efficient Hydrogen Evolution. <b>2020</b> , 16, e2005111	25
634	CO <sub>2</sub> hydrogenation on Co/CeO <sub>2</sub> -catalyst: Morphology effect from CeO <sub>2</sub> support. <b>2020</b> , 45, 26938-26952	13

633	Boosting oxygen evolution reactivity by modulating electronic structure and honeycomb-like architecture in Ni <sub>2</sub> P/N,P-codoped carbon hybrids. <b>2020</b> ,	4
632	Facile Synthesis of Three-dimensional Hierarchical Ni <sub>3</sub> S <sub>2</sub> @CoAl-LDHs Nanosheet Arrays and Their Efficient Hydrogen Evolution. <b>2020</b> , 12, 6401-6409	2
631	Ab initio study of oxygen evolution reaction and hydrogen evolution reaction via water splitting on pure and nitrogen-doped graphene surface. <b>2020</b> , 25, 101602	2
630	Surface domain heterojunction on rutile TiO for highly efficient photocatalytic hydrogen evolution. <b>2020</b> , 5, 1596-1602	9
629	PtMn/PtCo alloy nanofascicles: robust electrocatalysts for electrocatalytic hydrogen evolution reaction under both acidic and alkaline conditions. <b>2020</b> , 7, 4377-4386	8
628	Eco-Friendly and Solvent-Less Mechanochemical Synthesis of ZrO <sub>2</sub> /MnCO <sub>3</sub> /N-Doped Graphene Nanocomposites: A Highly Efficacious Catalyst for Base-Free Aerobic Oxidation of Various Types of Alcohols. <b>2020</b> , 10, 1136	3
627	Two-dimensional organic-inorganic heterostructures of in situ-grown layered COF on Ti <sub>3</sub> C <sub>2</sub> MXene nanosheets for lithium-sulfur batteries. <b>2020</b> , 35, 100991	34
626	Dynamic evolution of isolated Ru/FeP atomic interface sites for promoting the electrochemical hydrogen evolution reaction. <b>2020</b> , 8, 22607-22612	16
625	MnS-Nanoparticles-Decorated Three-Dimensional Graphene Hybrid as Highly Efficient Bifunctional Electrocatalyst for Hydrogen Evolution Reaction and Oxygen Reduction Reaction. <b>2020</b> , 10, 1141	2
624	Enabling the ability of Li storage at high rate as anodes by utilizing natural rice husks-based hierarchically porous SiO <sub>2</sub> /N-doped carbon composites. <b>2020</b> , 359, 136933	16
623	Can Single Metal Atoms Trapped in Defective h-BN/Cu(111) Improve Electrocatalysis of the H <sub>2</sub> Evolution Reaction?. <b>2020</b> , 124, 23690-23698	1
622	All Boron Atoms in a ScB <sub>12</sub> Monolayer Contribute to the Hydrogen Evolution Reaction. <b>2020</b> , 124, 23221-23229	1
621	Optimization of photocarrier dynamics and activity in phosphorene with intrinsic defects for nitrogen fixation. <b>2020</b> , 8, 20570-20580	8
620	Co/Mo <sub>2</sub> C composites for efficient hydrogen and oxygen evolution reaction. <b>2020</b> , 45, 21221-21231	20
619	Beyond Hydrogen Evolution: Solar-Driven, Water-Donating Transfer Hydrogenation over Platinum/Carbon Nitride. <b>2020</b> , 10, 9227-9235	31
618	Hydrogen Evolution Reaction over Single-Atom Catalysts Based on Metal Adatoms at Defected Graphene and h-BN. <b>2020</b> , 124, 16860-16867	7
617	Insight into enhanced visible-light photocatalytic activity of SWCNTs/g-C <sub>3</sub> N <sub>4</sub> nanocomposites from first principles. <b>2020</b> , 530, 147181	22
616	Spectral Study of the Inverse Effect of Metal on the Properties of a Carrier. <b>2020</b> , 94, 2342-2348	1

615	Graphitic Carbon Nitride Films: Emerging Paradigm for Versatile Applications. <b>2020</b> ,	21
614	A Hydrogen-Initiated Chemical Epitaxial Growth Strategy for In-Plane Heterostructured Photocatalyst. <b>2020</b> ,	18
613	Infrared response in photocatalytic polymeric carbon nitride for water splitting via an upconversion mechanism. <b>2020</b> , 1,	9
612	Self-activated anodic nanoporous stainless steel electrocatalysts with high durability for the hydrogen evolution reaction. <b>2020</b> , 364, 137315	15
611	Highly Conductive Nitrogen-Doped Vertically Oriented Graphene toward Versatile Electrode-Related Applications. <b>2020</b> , 14, 15327-15335	13
610	Atomic uranium modified graphdiyne as catalytic material for hydrogen evolution reaction: An interfacial descriptor led mechanistic study. <b>2020</b> , 45, 24604-24614	4
609	Excess Se-doped MoSe <sub>2</sub> and nitrogen-doped reduced graphene oxide composite as electrocatalyst for hydrogen evolution and oxygen reduction reaction. <b>2020</b> , 848, 156588	15
608	Fast and Facile Room-Temperature Synthesis of MOF-Derived Co Nanoparticle/Nitrogen-Doped Porous Graphene in Air Atmosphere for Overall Water Splitting. <b>2020</b> , 8, 11947-11955	13
607	Two-dimensional B3P monolayer as a superior anode material for Li and Na ion batteries: a first-principles study. <b>2020</b> , 17, 100486	5
606	NiCoP nanoparticles encapsulated in cross-linked graphene aerogel to efficient hydrogen evolution reaction. <b>2020</b> , 31, 13521-13530	1
605	NiO-decorated graphitic carbon nitride toward electrocatalytic hydrogen production from ethanol. <b>2020</b> , 49, 12088-12097	10
604	Efficient Renewable-to-Hydrogen Conversion via Decoupled Electrochemical Water Splitting. <b>2020</b> , 1, 100138	16
603	Recent advance and prospectives of electrocatalysts based on transition metal selenides for efficient water splitting. <b>2020</b> , 78, 105234	81
602	Facile one-pot supercritical synthesis of MoS <sub>2</sub> /pristine graphene nanohybrid as a highly active advanced electrocatalyst for hydrogen evolution reaction. <b>2020</b> , 531, 147282	5
601	Mechanism of CO <sub>2</sub> conversion into methanol and methane at the edge of graphitic carbon nitride sheet: A first-principle study. <b>2020</b> , 169, 73-81	6
600	Enabling efficient hydrogen-evolution reaction over perovskite oxide electrocatalysts through phosphorus promotion. <b>2020</b> , 45, 24859-24869	10
599	Surface Coordination Chemistry of Atomically Dispersed Metal Catalysts. <b>2020</b> , 120, 11810-11899	134
598	Unveiling the Active Site of Metal-Free Nitrogen-doped Carbon for Electrocatalytic Carbon Dioxide Reduction. <b>2020</b> , 1, 100145	19

597	Selective hydrogenation of nitroarenes under mild conditions by the optimization of active sites in a well defined Co@NC catalyst. <b>2020</b> , 22, 5730-5741	26
596	MoN-Ni/NF Heterostructure Boosts Electrocatalytic Hydrogen Evolution with Pt-Like Activity. <b>2020</b> , 59, 16514-16521	2
595	Robust Active Site Design of Single-Atom Catalysts for Electrochemical Ammonia Synthesis. <b>2020</b> , 124, 23164-23176	3
594	Partially exposed RuP surface in hybrid structure endows its bifunctionality for hydrazine oxidation and hydrogen evolution catalysis. <b>2020</b> , 6,	66
593	Exploring The Effect of Precursors of Polymeric Carbon Nitride Nanosheets on their Photo and Electrocatalytic Applications. <b>2020</b> , 5, 12679-12689	1
592	Direct Observation of Carbon Dioxide Electroreduction on Gold: Site Blocking by the Stern Layer Controls CO Adsorption Kinetics. <b>2020</b> , 11, 8307-8313	8
591	Non-Metal Single-Phosphorus-Atom Catalysis of Hydrogen Evolution. <b>2020</b> , 132, 23999-24007	12
590	Ultrathin and porous $\gamma$ -FeOOH modified Ni <sub>3</sub> S <sub>2</sub> 3D heterostructure nanosheets with excellent alkaline overall water splitting performance. <b>2020</b> , 8, 21199-21207	25
589	Oxygen-Doped VS <sub>4</sub> Microspheres with Abundant Sulfur Vacancies as a Superior Electrocatalyst for the Hydrogen Evolution Reaction. <b>2020</b> , 8, 15055-15064	6
588	Template Construction of Porous CoP/COP Microflowers Threaded with Carbon Nanotubes toward High-Efficiency Oxygen Evolution and Hydrogen Evolution Electrocatalysts. <b>2020</b> , 59, 12232-12239	5
587	Atomic Pt-Clusters Decoration Triggers a High-Rate Performance on Ni@Pd Bimetallic Nanocatalyst for Hydrogen Evolution Reaction in Both Alkaline and Acidic Medium. <b>2020</b> , 10, 5155	3
586	Atomic-Level Functionalized Graphdiyne for Electrocatalysis Applications. <b>2020</b> , 10, 929	4
585	Metal oxide-based materials as an emerging family of hydrogen evolution electrocatalysts. <b>2020</b> , 13, 3361-3392	151
584	Non-Metal Single-Phosphorus-Atom Catalysis of Hydrogen Evolution. <b>2020</b> , 59, 23791-23799	28
583	Photocatalytic Hydrogen Evolution under Ambient Conditions on Polymeric Carbon Nitride/Donor-Acceptor Organic Molecule Heterostructures. <b>2020</b> , 30, 2005106	18
582	Illustrating the Role of Quaternary-N of BINOL Covalent Triazine-Based Frameworks in Oxygen Reduction and Hydrogen Evolution Reactions. <b>2020</b> , 12, 44689-44699	19
581	Electrochemical Compression Technologies for High-Pressure Hydrogen: Current Status, Challenges and Perspective. <b>2020</b> , 3, 690-729	13
580	Single-Atom Tungsten-Doped CoP Nanoarrays as a High-Efficiency pH-Universal Catalyst for Hydrogen Evolution Reaction. <b>2020</b> , 8, 14825-14832	32



579	Atomic Insights into Robust PtPdO Interfacial Site-Boosted Hydrogen Generation. <b>2020</b> , 10, 11417-11429	11
578	Single-atom Ru anchored in nitrogen-doped MXene (Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> ) as an efficient catalyst for the hydrogen evolution reaction at all pH values. <b>2020</b> , 8, 24710-24717	42
577	Sulfur vacancies promoting Fe-doped Ni <sub>3</sub> S <sub>2</sub> nanopyramid arrays as efficient bifunctional electrocatalysts for overall water splitting. <b>2020</b> , 4, 3326-3333	20
576	Metal-Free Hydrogen-Bonded Polymers Mimic Noble Metal Electrocatalysts. <b>2020</b> , 32, e1902177	10
575	Advancement of Platinum (Pt)-Free (Non-Pt Precious Metals) and/or Metal-Free (Non-Precious-Metals) Electrocatalysts in Energy Applications: A Review and Perspectives. <b>2020</b> , 34, 6634-6695	53
574	In situ synthesis of ultrafine metallic MoO <sub>2</sub> /carbon nitride nanosheets for efficient photocatalytic hydrogen generation: a prominent cocatalytic effect. <b>2020</b> , 10, 4053-4060	5
573	FeCoNi Sulfides Derived From Sulfurization of Precursor Oxides as Oxygen Evolution Reaction Catalyst. <b>2020</b> , 8, 334	10
572	Thermochemical method of synthesizing stemmed nanoflower TiO <sub>2</sub> /eC <sub>3</sub> N <sub>4</sub> heterojunction structures with enhanced solar water splitting. <b>2020</b> , 2, 035002	1
571	Ammonia Thermal Treatment toward Topological Defects in Porous Carbon for Enhanced Carbon Dioxide Electroreduction. <b>2020</b> , 32, e2001300	60
570	Potassium Poly(Heptazine Imide): Transition Metal-Free Solid-State Triplet Sensitizer in Cascade Energy Transfer and [3+2]-cycloadditions. <b>2020</b> , 59, 15061-15068	46
569	Kalium-Polyheptazinimid: Ein Übergangsmetallfreier Festkörper-Triplett-Sensibilisator in Kaskadenenergietransfer und [3+2]-Cycloadditionen. <b>2020</b> , 132, 15172-15180	9
568	Deeply Rechargeable and Hydrogen-Evolution-Suppressing Zinc Anode in Alkaline Aqueous Electrolyte. <b>2020</b> , 20, 4700-4707	53
567	Multicomponent N doped graphene coating Co@Zn heterostructures electrocatalysts as high efficiency HER electrocatalyst in alkaline electrolyte. <b>2020</b> , 45, 16326-16336	10
566	Hydrogen oxidation reaction response of noble-metal based bulk metallic glasses. <b>2020</b> , 353, 136616	3
565	Highly enhanced photocatalytic hydrogen evolution activity of graphitic carbon nitride with 3D connected mesoporous structure. <b>2020</b> , 25, e00184	1
564	Highly Dispersed MoO <sub>2</sub> Nanoparticles Confined in N-Doped Porous Carbon Nanosheets for Efficient Hydrogen Evolution in Alkaline Media. <b>2020</b> , 34, 9050-9057	6
563	Real-Time Visualization of the Single-Nanoparticle Electrocatalytic Hydrogen Generation Process and Activity under Dark Field Microscopy. <b>2020</b> , 92, 9016-9023	15
562	Nickel Nanowire Arrays with Preferential Orientation for Boosting Hydrogen Evolution Reaction Capability. <b>2020</b> , 167, 106501	4

561	Confined growth of ultrafine Mo <sub>2</sub> C nanoparticles embedded in N-doped carbon nanosheet for water splitting. <b>2020</b> , 842, 155939	8
560	2D MoSe <sub>2</sub> /CoP intercalated nanosheets for efficient electrocatalytic hydrogen production. <b>2020</b> , 45, 19246-19256	13
559	Strategies of engineering 2D nanomaterial-based electrocatalysts toward hydrogen evolution reaction. <b>2020</b> , 9, 1	10
558	Combined Neural Network Potential and Density Functional Theory Study of TiAl <sub>2</sub> O <sub>5</sub> Surface Morphology and Oxygen Reduction Reaction Overpotentials. <b>2020</b> , 124, 15171-15179	7
557	Theoretical and experimental investigations of mesoporous C <sub>3</sub> N <sub>5</sub> /MoS <sub>2</sub> hybrid for lithium and sodium ion batteries. <b>2020</b> , 72, 104702	31
556	Chemically modified phosphorene as efficient catalyst for hydrogen evolution reaction. <b>2020</b> , 32, 025202	8
555	Graphene Activation Explains the Enhanced Hydrogen Evolution on Graphene-Coated Molybdenum Carbide Electrocatalysts. <b>2020</b> , 11, 2759-2764	14
554	Self-supported materials for battery technology-A review. <b>2020</b> , 831, 154844	5
553	A simple strategy for tridoped porous carbon nanosheet as superior electrocatalyst for bifunctional oxygen reduction and hydrogen evolution reactions. <b>2020</b> , 162, 586-594	30
552	A green approach for enhancing the electrocatalytic activity and stability of NiFe <sub>2</sub> O <sub>4</sub> /CB nanospheres towards hydrogen production. <b>2020</b> , 154, 704-714	9
551	Highly efficient electrocatalytic hydrogen evolution promoted by O-Mo-C interfaces of ultrafine EMoC nanostructures. <b>2020</b> , 11, 3523-3530	29
550	Creating Competitive Active Sites on CNTs Walls by N-Doping and Sublayer Co <sub>4</sub> N Encapsulating for Efficient Hydrogen Evolution Reaction. <b>2020</b> , 7, 2065-2072	2
549	Phosphating 2D CoAl LDH anchored on 3D self-assembled NiTiO <sub>3</sub> hollow rods for efficient hydrogen evolution. <b>2020</b> , 10, 2931-2947	29
548	Efficient bifunctional catalysts synthesized from three-dimensional Ni/Fe bimetallic organic frameworks for overall urea electrolysis. <b>2020</b> , 49, 5646-5652	16
547	g-C <sub>3</sub> N <sub>4</sub> /WTe <sub>2</sub> Hybrid Electrocatalyst for Efficient Hydrogen Evolution Reaction. <b>2020</b> , 124, 8726-8735	7
546	Highly transparent and flexible graphitic C <sub>3</sub> N <sub>4</sub> nanowire/PVA/PEDOT:PSS supercapacitors for transparent electronic devices. <b>2020</b> , 13, 2051006	
545	Metal-free hydrophilic D-A conjugated polyelectrolyte dots/g-C <sub>3</sub> N <sub>4</sub> nanosheets heterojunction for efficient and irradiation-stable water-splitting photocatalysis. <b>2020</b> , 270, 118852	27
544	Post-redox engineering electron configurations of atomic thick C <sub>3</sub> N <sub>4</sub> nanosheets for enhanced photocatalytic hydrogen evolution. <b>2020</b> , 270, 118855	17

543	Sulfur and molybdenum Co-doped graphitic carbon nitride as a superior water dissociation electrocatalyst for alkaline hydrogen evolution reaction. <b>2020</b> , 46, 14178-14187	10
542	Bifunctional Heterostructured Transition Metal Phosphides for Efficient Electrochemical Water Splitting. <b>2020</b> , 30, 2003261	149
541	High-efficient hydrogen purification through two-dimensional CrI <sub>3</sub> membrane via a first-principles calculation. <b>2020</b> , 529, 147024	2
540	Two-Dimensional Layered Materials: High-Efficient Electrocatalysts for Hydrogen Evolution Reaction. <b>2020</b> , 3, 6270-6296	27
539	Adsorption of H <sub>2</sub> , N <sub>2</sub> , CO, H <sub>2</sub> S, NH <sub>3</sub> , SO <sub>2</sub> and CH <sub>4</sub> on Li-functionalized graphitic carbon nitride investigated by density functional theory. <b>2020</b> , 43, 1	2
538	Advanced Characterization Techniques for Identifying the Key Active Sites of Gas-Involved Electrocatalysts. <b>2020</b> , 30, 2001704	11
537	MoS <sub>2</sub> /NiS core-shell structures for improved electrocatalytic process of hydrogen evolution. <b>2020</b> , 472, 228497	14
536	Methanol conversion on borocarbonitride catalysts: Identification and quantification of active sites. <b>2020</b> , 6, eaba5778	20
535	Direct oxidation of methane to methanol on Co embedded N-doped graphene: Comparing the role of N <sub>2</sub> O and O <sub>2</sub> as oxidants. <b>2020</b> , 602, 117716	3
534	Site- and Spatial-Selective Integration of Non-noble Metal Ions into Quantum Dots for Robust Hydrogen Photogeneration. <b>2020</b> , 3, 571-585	20
533	Vacancy mediated improvement in electrocatalytic HER on Nano-CeO <sub>2</sub> -Al <sub>2</sub> O <sub>3</sub> incorporated Ni-P electrode. <b>2020</b> , 116, 105138	6
532	Enlarged interlayer spacing and enhanced capacitive behavior of a carbon anode for superior potassium storage. <b>2020</b> , 65, 2014-2021	25
531	Efficient photocatalytic overall water splitting on metal-free 1D SWCNT/2D ultrathin C <sub>3</sub> N <sub>4</sub> heterojunctions via novel non-resonant plasmonic effect. <b>2020</b> , 278, 119312	46
530	Single transition metal atoms anchored on a CN monolayer as efficient catalysts for hydrazine electrooxidation. <b>2020</b> , 22, 16691-16700	3
529	Computational and Experimental Analysis of Carbon Functional Nanomaterials. <b>2020</b> , 269-311	
528	Current Measurement and Electrochemical Characterization of Gas Evolution Reactions on a Rotating Ring-Disk Electrode. <b>2020</b> , 11, 301-308	2
527	Green Synthesis of M <sub>0</sub> Nanoparticles (M=Pd, Pt, and Ru) for Electrocatalytic Hydrogen Evolution. <b>2020</b> , 60, 630-637	1
526	Non-noble metal single-atom catalysts prepared by wet chemical method and their applications in electrochemical water splitting. <b>2020</b> , 47, 333-345	52

525	Iron Nanoparticles Encapsulated in S,N-Codoped Carbon: Sulfur Doping Enriches Surface Electron Density and Enhances Electrocatalytic Activity toward Oxygen Reduction. <b>2020</b> , 12, 12686-12695	23
524	Metal-free photocatalysts for hydrogen evolution. <b>2020</b> , 49, 1887-1931	190
523	Intermolecular electron modulation by P/O bridging in an IrO <sub>2</sub> -CoPi catalyst to enhance the hydrogen evolution reaction. <b>2020</b> , 8, 8273-8280	13
522	Metal free triad from red phosphorous, reduced graphene oxide and graphitic carbon nitride (red P-rGO-g-C <sub>3</sub> N <sub>4</sub> ) as robust electro-catalysts for hydrogen evolution reaction. <b>2020</b> , 338, 135851	14
521	2020 Roadmap on Carbon Materials for Energy Storage and Conversion. <b>2020</b> , 15, 995-1013	99
520	Pegylated carbon nitride nanosheets for enhanced reactive oxygen species generation and photodynamic therapy under hypoxic conditions. <b>2020</b> , 25, 102167	9
519	Hydrazone-Linked Heptazine Polymeric Carbon Nitrides for Synergistic Visible-Light-Driven Catalysis. <b>2020</b> , 26, 7358-7364	12
518	Pristine S,N-containing Mn-based metal organic framework nanorods enable efficient oxygen reduction electrocatalysis. <b>2020</b> , 49, 4336-4342	9
517	MOF-derived electrocatalysts for oxygen reduction, oxygen evolution and hydrogen evolution reactions. <b>2020</b> , 49, 1414-1448	587
516	Accelerating Atomic Catalyst Discovery by Theoretical Calculations-Machine Learning Strategy. <b>2020</b> , 10, 1903949	41
515	A Simple Molecular Design Strategy for Two-Dimensional Covalent Organic Framework Capable of Visible-Light-Driven Water Splitting. <b>2020</b> , 142, 4508-4516	92
514	Metal-free two-dimensional phosphorus carbide as an efficient electrocatalyst for hydrogen evolution reaction comparable to platinum. <b>2020</b> , 71, 104603	22
513	MOF Derived CoO@Co/NCNT Nanocomposite for Electrochemical Hydrogen Evolution, Flexible Zinc-Air Batteries, and Overall Water Splitting. <b>2020</b> , 59, 3160-3170	38
512	Fe <sub>3</sub> O <sub>4</sub> /CoO Interfacial Nanostructure Supported on Carbon Nanotubes as a Highly Efficient Electrocatalyst for Oxygen Evolution Reaction. <b>2020</b> , 8, 3336-3346	22
511	Promotion of electrocatalytic nitrogen reduction reaction on N-doped porous carbon with secondary heteroatoms. <b>2020</b> , 266, 118633	63
510	Transition metal atoms implanted into MXenes (M <sub>2</sub> CO <sub>2</sub> ) for enhanced electrocatalytic hydrogen evolution reaction. <b>2020</b> , 509, 145319	18
509	Zinc-Mediated Template Synthesis of Fe-N-C Electrocatalysts with Densely Accessible Fe-N Active Sites for Efficient Oxygen Reduction. <b>2020</b> , 32, e1907399	183
508	The Crucial Role of Charge Accumulation and Spin Polarization in Activating Carbon-Based Catalysts for Electrocatalytic Nitrogen Reduction. <b>2020</b> , 132, 4555-4561	4

507	Photo-Induced Exciton Dynamics and Broadband Light Harvesting in ZnO Nanorod-Templated Multilayered Two-Dimensional MoS <sub>2</sub> /MoO <sub>3</sub> Photoanodes for Solar Fuel Generation. <b>2020</b> , 3, 1223-1231	14
506	The Crucial Role of Charge Accumulation and Spin Polarization in Activating Carbon-Based Catalysts for Electrocatalytic Nitrogen Reduction. <b>2020</b> , 59, 4525-4531	88
505	Vitamin B12 functionalized N-Doped graphene: A promising electro-catalyst for hydrogen evolution and electro-oxidative sensing of H <sub>2</sub> O <sub>2</sub> . <b>2020</b> , 337, 135730	10
504	Two-dimensional materials for energy conversion and storage. <b>2020</b> , 111, 100637	73
503	ZIF-67/g-C <sub>3</sub> N <sub>4</sub> -Modified Electrode for Simultaneous Voltammetric Determination of Uric Acid and Acetaminophen with Cetyltrimethylammonium Bromide as Discriminating Agent. <b>2020</b> , 2020, 1-13	1
502	Direct Evidence of an Efficient Plasmon-Induced Hot-Electron Transfer at an in Situ Grown Ag/TiO <sub>2</sub> Interface for Highly Enhanced Solar H <sub>2</sub> Generation. <b>2020</b> , 3, 1821-1830	13
501	Single-Atom Catalysts for Electrochemical Hydrogen Evolution Reaction: Recent Advances and Future Perspectives. <b>2020</b> , 12, 21	83
500	Tracking Compression Changes in an Aqueous Electrolyte for Real-Time H <sub>2</sub> and O <sub>2</sub> Gas Evolution Quantification during Total Water Splitting Using BARDS. <b>2020</b> , 3, 2000-2009	0
499	Design aktiver atomarer Zentren für HER-Elektrokatalysatoren. <b>2020</b> , 132, 20978-20998	9
498	Superlattices of covalently cross-linked 2D materials for the hydrogen evolution reaction. <b>2020</b> , 8, 020902	6
497	Silicon and Phosphorus Co-doped Bipyridine-Linked Covalent Triazine Framework as a Promising Metal-Free Catalyst for Hydrogen Evolution Reaction: A Theoretical Investigation. <b>2020</b> , 11, 1542-1549	15
496	3D layered nano-flower MoS <sub>x</sub> anchored with CoP nanoparticles form double proton adsorption site for enhanced photocatalytic hydrogen evolution under visible light driven. <b>2020</b> , 45, 2578-2592	34
495	Molybdenum selenide nanosheets with enriched active sites supported on titanium mesh as a superior binder-free electrode for electrocatalytic hydrogen evolution and supercapacitor. <b>2020</b> , 107, 35-43	7
494	A Highly Efficient Metal-Free Electrocatalyst of F-Doped Porous Carbon toward N Electroreduction. <b>2020</b> , 32, e1907690	57
493	Nickel nanoparticles coated on the exfoliated graphene layer as an efficient and stable catalyst for oxygen reduction and hydrogen evolution in alkaline media. <b>2020</b> , 7, 055504	3
492	Co nanoparticles coupling induced high catalytic activity of nitrogen doped carbon towards hydrogen evolution reaction in acidic/alkaline solutions. <b>2020</b> , 342, 136076	10
491	Insight into the electrochemical-cycling activation of Pt/molybdenum carbide toward synergistic hydrogen evolution catalysis. <b>2020</b> , 384, 169-176	8
490	One-dimensional mesoporous inorganic nanostructures and their applications in energy, sensor, catalysis and adsorption. <b>2020</b> , 113, 100671	39

- 489 Combinatorial Design and Computational Screening of Two-Dimensional Transition Metal Trichalcogenide Monolayers: Toward Efficient Catalysts for Hydrogen Evolution Reaction. **2020**, 11, 3192-3197<sup>14</sup>
- 488 Hierarchical Mesoporous MXene-NiCoP Electrocatalyst for Water-Splitting. **2020**, 12, 18570-18577 66
- 487 NiCoO<sub>2</sub>-carbon composite as an efficient bifunctional catalyst for electrochemical water splitting. **2020**, 26, 3959-3967 1
- 486 Single-crystalline CoFe nanoparticles encapsulated in N-doped carbon nanotubes as a bifunctional catalyst for water splitting. **2020**, 4, 2307-2313 9
- 485 Encapsulated Red Phosphorus in rGO-C<sub>3</sub>N<sub>4</sub> Architecture as Extending-Life Anode Materials for Lithium-Ion Batteries. **2020**, 167, 060518 7
- 484 Biopolymer-Inspired N-Doped Nanocarbon Using Carbonized Polydopamine: A High-Performance Electrocatalyst for Hydrogen-Evolution Reaction. **2020**, 12, 4
- 483 Protein denaturation induced electrocatalytic hydrogen evolution. **2020**, 165, 378-385 1
- 482 An Atomically Dispersed Pt Catalyst Anchored on an Fe/N/C Support for Enhanced Hydrogen Evolution Reaction. **2020**, 124, 11760-11766 8
- 481 Surface modification of g-C<sub>3</sub>N<sub>4</sub>: first-principles study. **2020**, 31, 509-539 2
- 480 Three-Dimensional Amorphous NiCoFe Nanowire@Nanosheets Catalysts for Enhanced Oxygen Evolution Reaction. **2020**, 167, 064514 6
- 479 Recent progress of precious-metal-free electrocatalysts for efficient water oxidation in acidic media. **2020**, 51, 113-133 21
- 478 In Situ Phosphatizing of Triphenylphosphine Encapsulated within Metal-Organic Frameworks to Design Atomic Co-PN Interfacial Structure for Promoting Catalytic Performance. **2020**, 142, 8431-8439 123
- 477 Metallic nanostructures with low dimensionality for electrochemical water splitting. **2020**, 49, 3072-3106 238
- 476 Synergistically Coupling Black Phosphorus Quantum Dots with MnO Nanosheets for Efficient Electrochemical Nitrogen Reduction Under Ambient Conditions. **2020**, 16, e1907091 25
- 475 The coupling of experiments with density functional theory in the studies of the electrochemical hydrogen evolution reaction. **2020**, 8, 8783-8812 15
- 474 Crystal Facet Engineering of Single-Crystalline TiC Nanocubes for Improved Hydrogen Evolution Reaction. **2021**, 31, 2008028 6
- 473 Strain engineering the electronic and photocatalytic properties of WS<sub>2</sub>/blue phosphorene van der Waals heterostructures. **2021**, 11, 179-190 3
- 472 Construction of Co<sub>3</sub>O<sub>4</sub>/Fe<sub>2</sub>O<sub>3</sub> nanosheets on nickel foam as efficient electrocatalyst for the oxygen evolution reaction. **2021**, 148, 109680 7

471	Synthesis of hollow CoSe <sub>2</sub> /MoSe <sub>2</sub> nanospheres for efficient hydrazine-assisted hydrogen evolution. <b>2021</b> , 404, 126529	17
470	Technical principles of atmospheric carbon dioxide reduction and conversion: economic considerations for some developing countries. <b>2021</b> , 23, 475-482	2
469	Carbon-based electrocatalysts for sustainable energy applications. <b>2021</b> , 116, 100717	71
468	A review on the 2D black phosphorus materials for energy applications. <b>2021</b> , 124, 108242	8
467	Theoretical investigation of CoTa <sub>2</sub> O <sub>6</sub> /graphene heterojunctions for oxygen evolution reaction. <b>2021</b> , 16, 1	3
466	PEO-b-PS Block Copolymer Templated Mesoporous Carbons: A Comparative Study of Nitrogen and Sulfur Doping in the Oxygen Reduction Reaction to Hydrogen Peroxide. <b>2021</b> , 27, 1002-1014	11
465	Synergistic Interaction of Double/Simple Perovskite Heterostructure for Efficient Hydrogen Evolution Reaction at High Current Density.. <b>2021</b> , 5, e2000701	14
464	Transition Metal and Nitrogen Co-Doped Carbon-based Electrocatalysts for the Oxygen Reduction Reaction: From Active Site Insights to the Rational Design of Precursors and Structures. <b>2021</b> , 14, 33-55	15
463	Confinement in two-dimensional materials: Major advances and challenges in the emerging renewable energy conversion and other applications. <b>2021</b> , 61, 100294	11
462	On the molecular properties of graphene-pyrazines conjugated Ru and Fe complexes: Computational insights. <b>2021</b> , 26, 101694	
461	Novel ionic liquid modified carbon nitride fabricated by in situ pyrolysis of 1-butyl-3-methylimidazolium cyanamide to improve electronic structure for efficiently degradation of bisphenol A. <b>2021</b> , 610, 125648	2
460	Synthesis of nitrogen and sulfur doped graphene on graphite foam for electro-catalytic phenol degradation and water splitting. <b>2021</b> , 583, 139-148	14
459	Highly Dispersed Cobalt Nanoparticles Embedded in Nitrogen-Doped Graphitized Carbon for Fast and Durable Potassium Storage. <b>2020</b> , 13, 21	39
458	Formate-Bicarbonate Cycle as a Vehicle for Hydrogen and Energy Storage. <b>2021</b> , 14, 1258-1283	9
457	Engineering iron phosphide-on-plasmonic Ag/Au-nanoshells as an efficient cathode catalyst in water splitting for hydrogen production. <b>2021</b> , 218, 119520	3
456	Nb <sub>4</sub> C <sub>3</sub> T <sub>x</sub> (MXene) as a new stable catalyst for the hydrogen evolution reaction. <b>2021</b> , 46, 1955-1966	13
455	Transition-Metal Carbides as Hydrogen Evolution Reduction Electrocatalysts: Synthetic Methods and Optimization Strategies. <b>2021</b> , 27, 5074-5090	6
454	Coordination Number Regulation of Molybdenum Single-Atom Nanozyme Peroxidase-like Specificity. <b>2021</b> , 7, 436-449	62

453	Post synthetic annealing of zeolitic imidazolate framework-67 for high-performance hybrid supercapacitors. <b>2021</b> , 542, 148716	9
452	Electrochemical Hydrogen Storage in Amine-Activated Polydopamine. <b>2021</b> , 5, 2000176	4
451	Self-supported bifunctional electrocatalysts with Ni nanoparticles encapsulated in vertical N-doped carbon nanotube for efficient overall water splitting. <b>2021</b> , 413, 127531	14
450	A new steric tetra-imidazole for facile synthesis of high loading atomically dispersed FeN <sub>4</sub> electrocatalysts. <b>2021</b> , 80, 105533	16
449	Metal-organic framework derived Co <sub>3</sub> O <sub>4</sub> @Mo-Co <sub>3</sub> S <sub>4</sub> -Ni <sub>3</sub> S <sub>2</sub> heterostructure supported on Ni foam for overall water splitting. <b>2021</b> , 413, 127482	17
448	Coupling hydrothermal and photothermal single-atom catalysis toward excellent water splitting to hydrogen. <b>2021</b> , 283, 119660	38
447	Electronic Structure Tuning of 2D Metal (Hydr)oxides Nanosheets for Electrocatalysis. <b>2021</b> , 17, e2002240	40
446	Cocatalyst-integrated photocatalysts for solar-driven hydrogen and oxygen production. <b>2021</b> , 217-247	
445	Enhanced effect of CdS on amorphous Mo <sub>15</sub> S <sub>19</sub> for photocatalytic hydrogen evolution. <b>2021</b> , 45, 3920-3931	6
444	Mechanistic insights into interfaces and nitrogen vacancies in cobalt hydroxide/tungsten nitride catalysts to enhance alkaline hydrogen evolution. <b>2021</b> , 9, 11323-11330	6
443	Density Functional Theory Studies of Doping and Curvature Effects on the Electrocatalytic Hydrogen Evolution Activity of Carbon Nanotubes. <b>2021</b> , 4, 600-611	1
442	Research Progress of Electrocatalyst for Hydrogen Evolution Reaction. <b>2021</b> , 11, 155-165	
441	Bottom-up pore-generation strategy modulated active nitrogen species for oxygen reduction reaction. <b>2021</b> , 5, 2684-2693	3
440	Tailoring unique neural-network-type carbon nanofibers inserted in CoP/NC polyhedra for robust hydrogen evolution reaction. <b>2021</b> , 13, 14705-14712	0
439	One-Dimensional van der Waals Heterostructures as Efficient Metal-Free Oxygen Electrocatalysts. <b>2021</b> , 15, 3309-3319	32
438	Hierarchical Carbon Nanocages as Efficient Catalysts for Oxidative Coupling of Benzylamine to N-Benzylidene Benzylamine. <b>2021</b> , 79, 539	1
437	Ultrathin 2D flower-like CoP@C with the active (211) facet for efficient electrocatalytic water splitting. <b>2021</b> , 23, 1777-1784	4
436	Role of oxygen-bound reaction intermediates in selective electrochemical CO <sub>2</sub> reduction. <b>2021</b> , 14, 3912-3930	27



435	Porous nanosheets of Cu <sub>3</sub> P@N,P co-doped carbon hosted on copper foam as an efficient and ultrastable pH-universal hydrogen evolution electrocatalyst. <b>2021</b> , 5, 2451-2457	3
434	CHAPTER 4: Graphitic Carbon Nitride Nanostructures as Potent Catalysts for Water Splitting: Theoretical Insights. <b>2021</b> , 127-173	1
433	Single-atom nickel terminating sp and sp nitride in polymeric carbon nitride for visible-light photocatalytic overall water splitting. <b>2021</b> , 12, 3633-3643	23
432	Highly Efficient Electrocatalytic Water Splitting. <b>2021</b> , 1335-1367	
431	Localized electron density modulation in conjugated polymer nanosheets for boosting photocatalytic H <sub>2</sub> evolution. <b>2021</b> , 9, 19625-19630	4
430	Design of non-transition-metal-doped nanoribbon catalysis to achieve efficient nitrogen fixation.	0
429	Versatile graphene oxide nanosheets via covalent functionalization and their applications. <b>2021</b> , 5, 4424-4444	7
428	Waste-Recovered Nanomaterials for Emerging Electrocatalytic Applications. <b>2021</b> , 247-292	
427	Heterogeneous Co <sub>2</sub> N nanofibers with controlled active terminal N sites for hydrogen evolution reaction. <b>2021</b> , 45, 4437-4442	0
426	Exploring edge functionalised blue phosphorene nanoribbons as novel photocatalysts for water splitting. <b>2021</b> , 45, 3570-3580	3
425	Engineering MoSe/WS Hybrids to Replace the Scarce Platinum Electrode for Hydrogen Evolution Reactions and Dye-Sensitized Solar Cells. <b>2021</b> , 13, 5061-5072	33
424	Electrochemical nitrogen reduction: recent progress and prospects. <b>2021</b> , 57, 7335-7349	13
423	Carbon-based metal-free electrocatalysts: from oxygen reduction to multifunctional electrocatalysis. <b>2021</b> , 50, 11785-11843	24
422	2D porous molybdenum nitride/cobalt nitride heterojunction nanosheets with interfacial electron redistribution for effective electrocatalytic overall water splitting. <b>2021</b> , 9, 8620-8629	27
421	Mechanism for Zincophilic Sites on Zinc-Metal Anode Hosts in Aqueous Batteries. <b>2021</b> , 11, 2003419	79
420	Bacterial Hydrogen Production: Prospects and Challenges. <b>2021</b> , 195-229	
419	P- or S-Doped graphdiyne as a superior metal-free electrocatalyst for the hydrogen evolution reaction: a computational study. <b>2021</b> , 45, 8101-8108	4
418	Vanadium Substitution Steering Reaction Kinetics Acceleration for NiN Nanosheets Endows Exceptionally Energy-Saving Hydrogen Evolution Coupled with Hydrazine Oxidation. <b>2021</b> , 13, 3881-3890	11

417	Distinguishing Among High Activity Electrocatalysts: Regression vs Classification. <b>2021</b> , 125, 4468-4476	1
416	Hierarchical fibrous bimetallic electrocatalyst based on ZnO-MoS <sub>2</sub> composite nanostructures as high performance for hydrogen evolution reaction. <b>2021</b> , 883, 115061	4
415	Non-Stoichiometry Induced Exsolution of Metal Oxide Nanoparticles via Formation of Wavy Surfaces and their Enhanced Electrocatalytic Activity: Case of Misfit Calcium Cobalt Oxide. <b>2021</b> , 13, 9897-9907	4
414	Electrochemical Water Splitting. <b>2021</b> , 533-555	1
413	Selective hydrodeoxygenation of lignin model compound (3,4-dimethoxybenzyl alcohol) by Pd/CN catalyst. <b>2021</b> , 169, 274-281	5
412	Electrocatalytic Conversion of CO <sub>2</sub> to Syngas. <b>2021</b> , 317-334	
411	Accelerating water dissociation kinetic in Co <sub>9</sub> S <sub>8</sub> electrocatalyst by mn/N Co-doping toward efficient alkaline hydrogen evolution. <b>2021</b> , 46, 7989-8001	8
410	Nanoscale chemical analysis of beam-sensitive polymeric materials by cryogenic electron microscopy. <b>2021</b> , 59, 1221-1231	3
409	Novel Carbene Anchored Molecular Catalysts for Hydrogen Evolution Reactions. <b>2021</b> , 125, 3793-3803	3
408	Surface-Modified Covalent Organic Polymer for Metal-Free Electrocatalytic Hydrogen Evolution Reaction. <b>2021</b> , 3, 1376-1384	2
407	Porphyrin Conjugated Polymer with Periodic Type II-Like Heterojunctions and Single-Atom Catalytic Sites for Broadband-Responsive Hydrogen Evolution. <b>2021</b> , 31, 2009819	17
406	Metal-free amino-graphdiyne for applications in electrocatalytic hydrogen evolution. <b>2021</b> , 395, 129-135	13
405	Efficient Water Splitting System Enabled by Multifunctional Platinum-Free Electrocatalysts. <b>2021</b> , 31, 2009853	14
404	Embedding atomic cobalt into graphene lattices to activate room-temperature ferromagnetism. <i>Nature Communications</i> , <b>2021</b> , 12, 1854	17.4 19
403	MX Anti-MXenes from Non-van der Waals Bulks for Electrochemical Applications: The Merit of Metallicity and Active Basal Plane. <b>2021</b> , 15, 6233-6242	9
402	Stable Unbiased Photo-Electrochemical Overall Water Splitting Exceeding 3% Efficiency via Covalent Triazine Framework/Metal Oxide Hybrid Photoelectrodes. <b>2021</b> , 33, e2008264	25
401	Scalable solid-phase synthesis of defect-rich graphene for oxygen reduction electrocatalysis. <b>2021</b> ,	2
400	Scalable Production of Cobalt Phthalocyanine Nanotubes: Efficient and Robust Hollow Electrocatalyst for Ammonia Synthesis at Room Temperature. <b>2021</b> , 15, 5230-5239	21

399	Efficient Hydrogen Evolution on Nanoscale Graphdiyne. <b>2021</b> , 17, e2006136	14
398	Designing MOF Nanoarchitectures for Electrochemical Water Splitting. <b>2021</b> , 33, e2006042	76
397	Graphene-Decorated Boron-Carbon-Nitride-Based Metal-Free Catalysts for an Enhanced Hydrogen Evolution Reaction. <b>2021</b> , 4, 3861-3868	4
396	Cobalt Nanoparticle-Embedded Nitrogen-Doped Carbon Catalyst Derived from a Solid-State Metal-Organic Framework Complex for OER and HER Electrocatalysis. <b>2021</b> , 14, 1320	6
395	Production of biodiesel from waste cooking oil using ZnCuO/N-doped graphene nanocomposite as an efficient heterogeneous catalyst. <b>2021</b> , 14, 102982	19
394	Available Active Sites on Fe <sub>3</sub> N Nanoparticles Synthesized by a Facile Route for Hydrogen Evolution Reaction. <b>2021</b> , 8, 2100070	0
393	Activating electrocatalytic hydrogen evolution performance of two-dimensional MSi <sub>2</sub> N <sub>4</sub> (M=Mo,W): A theoretical prediction. <b>2021</b> , 5,	8
392	Encapsulation of bimetallic phosphides into graphitized carbon for pH-universal hydrogen evolution reaction. <b>2021</b> ,	1
391	Activating PtSe <sub>2</sub> monolayer for hydrogen evolution reaction by defect engineering and Pd doping. <b>2021</b> , 545, 149013	9
390	Tuning of electrocatalytic activity of WO <sub>3</sub> /TiO <sub>2</sub> nanocomposite electrode for alkaline hydrogen evolution reaction. <b>2021</b> , 46, 15145-15160	4
389	Single-Atom Co-Decorated MoS <sub>2</sub> Nanosheets Assembled on Metal Nitride Nanorod Arrays as an Efficient Bifunctional Electrocatalyst for pH-Universal Water Splitting. <b>2021</b> , 31, 2100233	36
388	Metallic Pt and PtO <sub>2</sub> Dual-Cocatalyst-Loaded Binary Composite RGO-CN <sub>x</sub> for the Photocatalytic Production of Hydrogen and Hydrogen Peroxide. <b>2021</b> , 9, 6380-6389	4
387	Spin State Tuning of the Octahedral Sites in NiCo-Based Spinel toward Highly Efficient Urea Oxidation Reaction. <b>2021</b> , 125, 9190-9199	10
386	Quantum Plasmonics: Energy Transport Through Plasmonic Gap. <b>2021</b> , 33, e2006606	4
385	N-, P-, and O-doped porous carbon: A trifunctional metal-free electrocatalyst. <b>2021</b> , 544, 148912	13
384	Activating sulfur sites of CoS <sub>2</sub> electrocatalysts through tin doping for hydrogen evolution reaction. <b>2021</b> , 546, 149101	9
383	Anticatalytic Strategies to Suppress Water Electrolysis in Aqueous Batteries. <b>2021</b> , 121, 6654-6695	42
382	Rational design of ultrahigh loading metal single-atoms (Co, Ni, Mo) anchored on in-situ pre-crosslinked guar gum derived N-doped carbon aerogel for efficient overall water splitting. <b>2021</b> , 410, 128359	18

381	Why the microkinetic modeling of experimental tafel plots requires knowledge of the reaction intermediate's binding energy. e2100037	4
380	Pd <sub>4</sub> S <sub>3</sub> Se <sub>3</sub> , Pd <sub>4</sub> S <sub>3</sub> Te <sub>3</sub> , and Pd <sub>4</sub> Se <sub>3</sub> Te <sub>3</sub> : Candidate Two-Dimensional Janus Materials for Photocatalytic Water Splitting. <b>2021</b> , 33, 4128-4134	19
379	Constructing FeN <sub>4</sub> /graphitic nitrogen atomic interface for high-efficiency electrochemical CO <sub>2</sub> reduction over a broad potential window. <b>2021</b> , 7, 1297-1307	44
378	Recent advances in MXene-based nanoarchitectures as electrode materials for future energy generation and conversion applications. <b>2021</b> , 435, 213806	29
377	Single Pt atom-anchored C <sub>3</sub> N <sub>4</sub> : A bridging Pt-N bond boosted electron transfer for highly efficient photocatalytic H <sub>2</sub> generation. <b>2021</b> , 412, 128749	21
376	The ligand effect on the interface structures and electrocatalytic applications of atomically precise metal nanoclusters. <b>2021</b> , 32,	2
375	Rh@C <sub>8</sub> N <sub>8</sub> monolayer as a promising single-atom-catalyst for overall water splitting. <b>2021</b> , 549, 149320	9
374	Cyanogel and its derived-materials: properties, preparation methods, and electrochemical applications. <b>2021</b> , 20, 100701	2
373	A subtle review on the challenges of photocatalytic fuel cell for sustainable power production. <b>2021</b> , 46, 22877-22906	4
372	Manipulating the Coordination Chemistry of Ru <sup>II</sup> (O) <sub>2</sub> C Moieties for Fast Alkaline Hydrogen Evolution Kinetics. <b>2021</b> , 31, 2100698	22
371	Tuning the electronic and optical properties of Blue P/MoSeS and Blue P/MoSSe van der Waals heterostructure via biaxial strain. <b>2021</b> , 773, 138622	0
370	Exceptional Electrochemical HER Performance with Enhanced Electron Transfer between Ru Nanoparticles and Single Atoms Dispersed on a Carbon Substrate. <b>2021</b> , 60, 16044-16050	65
369	Metastable Two-Dimensional Materials for Electrocatalytic Energy Conversions. <b>2021</b> , 2, 559-573	25
368	Exceptional Electrochemical HER Performance with Enhanced Electron Transfer between Ru Nanoparticles and Single Atoms Dispersed on a Carbon Substrate. <b>2021</b> , 133, 16180-16186	6
367	Prevailing conjugated porous polymers for electrochemical energy storage and conversion: Lithium-ion batteries, supercapacitors and water-splitting. <b>2021</b> , 436, 213782	14
366	Highly Desirable Platform for Efficient Hydrogen Generation: Electrodeposited CoP on N-Doped Vertical Graphene. <b>2021</b> , 4, 5697-5705	0
365	Uniformly Dispersed Ru Nanoparticles Constructed by In Situ Confined Polymerization of Ionic Liquids for the Electrocatalytic Hydrogen Evolution Reaction.. <b>2021</b> , 5, e2100505	8
364	CeO <sub>2</sub> nanoparticles dispersed on CoAl-LDH hexagonal nanosheets as 0D/2D binary composite for enhanced photocatalytic hydrogen evolution. <b>2021</b> , 24, 101105	9

363	Unveiling Trifunctional Active Sites of a Heteronanoshet Electrocatalyst for Integrated Cascade Battery/Electrolyzer Systems. <b>2021</b> , 6, 2460-2468		7
362	Versatile noble-metal-free electrocatalyst synergistically accelerating for the highly comprehensive understanding evidence for Electrochemical Water Splitting: Future Achievements & Perspectives. <b>2021</b> , 24, 101104		4
361	Defective carbon-based materials: controllable synthesis and electrochemical applications. <b>2021</b> , 100059		3
360	Amorphous FeOOH decorated hierarchy capillary-liked CoAl LDH catalysts for efficient oxygen evolution reaction. <b>2021</b> , 46, 21289-21297		3
359	Mechanistic analysis of multiple processes controlling solar-driven HO synthesis using engineered polymeric carbon nitride. <i>Nature Communications</i> , <b>2021</b> , 12, 3701	17.4	35
358	Computational screening study of double transition metal carbonitrides M <sub>2</sub> M <sub>2</sub> CNO <sub>2</sub> -MXene as catalysts for hydrogen evolution reaction. <b>2021</b> , 7,		19
357	A robust metal-free electrocatalyst for nitrate reduction reaction to synthesize ammonia. <b>2021</b> , 19, 100431		9
356	Cube Cu <sub>2</sub> O modified CoAl-LDH p-n heterojunction for photocatalytic hydrogen evolution.		2
355	In situ N-, P- and Ca-codoped biochar derived from animal bones to boost the electrocatalytic hydrogen evolution reaction. <b>2021</b> , 170, 105568		4
354	Formic acid dehydrogenation attained by Pd nanoparticles-based catalysts supported on MWCNT-C <sub>3</sub> N <sub>4</sub> composites. <b>2021</b> ,		2
353	Reconstructed edges of T phase transition metal dichalcogenides. <b>2021</b> , 19, 100411		3
352	Differences and Similarities of Photocatalysis and Electrocatalysis in Two-Dimensional Nanomaterials: Strategies, Traps, Applications and Challenges. <b>2021</b> , 13, 156		20
351	NiB alloy@carbon nanotubes immobilized on the framework of Ni foam as a 3D hierarchical porous self-supporting electrode for hydrogen evolution reaction. <b>2021</b> , 46, 23245-23253		2
350	Judicious selection, validation, and use of reference electrodes for in situ and operando electrocatalysis studies. <b>2021</b> , 1, 997-997		2
349	Highly efficient and robust noble-metal free bifunctional water electrolysis catalyst achieved via complementary charge transfer. <i>Nature Communications</i> , <b>2021</b> , 12, 4606	17.4	25
348	Cobalt Nanoparticles Encapsulated in Hollow Carbon Nitride Nanotubes for Efficient Photocatalytic Hydrogen Evolution. <b>2021</b> , 9, 2100499		1
347	Ab-Initio Spectroscopic Characterization of Melem-Based Graphitic Carbon Nitride Polymorphs. <b>2021</b> , 11,		4
346	Single boron atom anchored on graphitic carbon nitride nanosheet (B/g-C <sub>2</sub> N) as a photocatalyst for nitrogen fixation: A first-principles study*. <b>2021</b> , 30, 083101		0

345	Theoretical screening of 2D materials supported transition-metal single atoms as efficient electrocatalysts for hydrogen evolution reaction. <b>2021</b> , 18, 101168	0
344	Photodepositing CdS on the Active Cyano Groups Decorated g-C N in Z-Scheme Manner Promotes Visible-Light-Driven Hydrogen Evolution. <b>2021</b> , 17, e2102699	12
343	Strategies for the enhanced water splitting activity over metal-organic frameworks-based electrocatalysts and photocatalysts. <b>2021</b> , 15, 100124	8
342	Disordered nitrogen-defect-rich porous carbon nitride photocatalyst for highly efficient H <sub>2</sub> evolution under visible-light irradiation. <b>2021</b> , 181, 193-203	29
341	Identification of the hydrogen utilization pathway for the electrocatalytic hydrogenation of phenol. <b>2021</b> , 64, 1586-1595	2
340	One-dimensional, space-confined, solid-phase growth of the CuS@MoS core-shell heterostructure for electrocatalytic hydrogen evolution. <b>2021</b> , 595, 88-97	8
339	Coupled intramolecular/heterointerfacial electron transfer in polyelectrolyte-shielded Iso-type black phosphorus hetero-structure boosts oxygen reduction kinetics. <b>2021</b> ,	0
338	Nanocomposite catalyst of graphitic carbon nitride and Cu/Fe mixed metal oxide for electrochemical CO <sub>2</sub> reduction to CO. <b>2021</b> , 291, 120052	24
337	N-functionalized hierarchical carbon composite derived from ZIF-67 and carbon foam for efficient overall water splitting. <b>2021</b> , 105, 222-222	1
336	Hollow Carbon Nanoballs on Graphene as Metal-Free Catalyst for Overall Electrochemical Water Splitting. <b>2021</b> , 8, 2101265	1
335	Shedding Light on the Role of Chemical Bond in Catalysis of Nitrogen Fixation. <b>2021</b> , 33, e2007891	6
334	A first principles investigation on the structural, mechanical, electronic, and catalytic properties of biphenylene. <b>2021</b> , 11, 19008	24
333	Donor-Acceptor Competition via Halide Vacancy Filling for Oxygen Detection of High Sensitivity and Stability by All-Inorganic Perovskite Films. <b>2021</b> , 17, e2102733	1
332	Fabrication of Ti <sub>3</sub> C <sub>2</sub> @MoO <sub>3</sub> nanocomposite as an electrode material for highly efficient and durable water splitting system. <b>2021</b> , 299, 120928	5
331	Iron/Iron Carbide (Fe/Fe <sub>3</sub> C) Encapsulated in S, N Codoped Graphitic Carbon as a Robust HER Electrocatalyst.	3
330	A stable and active three-dimensional carbon based trimetallic electrocatalyst for efficient overall wastewater splitting. <b>2021</b> , 46, 30762-30779	2
329	Sub-2 nm Ultrasmall High-Entropy Alloy Nanoparticles for Extremely Superior Electrocatalytic Hydrogen Evolution. <b>2021</b> , 143, 17117-17127	27
328	Novel metal-free in-plane functionalized graphitic carbon nitride with graphene quantum dots for effective photodegradation of 4-bromophenol. <b>2021</b> , 182, 89-99	5

327	Electronic modification in graphdiyne for future electrocatalytic applications. <b>2021</b> , 8, 044009		3
326	Using phosphorus-doped molybdenum sulfide with (1 0 0)-facet-exposed and enlarged interlayer spacing to enhance hydrogen evolution. <b>2021</b> , 897, 115545		
325	Crystallographic phase and morphology dependent hydrothermal synthesis of tungsten oxide for robust hydrogen evolution reaction. <b>2021</b> , 875, 160054		1
324	Metal-Free Triazine-Based 2D Covalent Organic Framework for Efficient H Evolution by Electrochemical Water Splitting. <b>2021</b> , 14, 5057-5064		5
323	The electronic properties and catalytic activity of precious-metals adsorbed silicene for hydrogen evolution reaction and oxygen evolution reaction. <b>2021</b> , 560, 150041		5
322	Ruthenium quantum dots supported on carbon nanofibers as an efficient electrocatalyst for hydrogen evolution reaction. <b>2021</b> , 46, 36763-36763		1
321	Regulation of functional groups on graphene quantum dots directs selective CO to CH conversion. <i>Nature Communications</i> , <b>2021</b> , 12, 5265	17.4	16
320	Metal-substituted zirconium diboride ( $Zr_{1-x}TM_xB_2$ ; TM = Ni, Co, and Fe) as low-cost and high-performance bifunctional electrocatalyst for water splitting. <b>2021</b> , 389, 138789		8
319	Doping engineering: Highly improving hydrogen evolution reaction performance of monolayer SnSe. <b>2021</b> , 46, 37907-37907		0
318	C9N4 as excellent dual electrocatalyst: A first principles study*. <b>2021</b> , 30, 096802		
317	Colloidal Nanocrystal-Based Electrocatalysts for Combating Environmental Problems and Energy Crisis.		
316	Van der Waals enhanced interfacial interaction in cellulose/zinc oxide nanocomposite coupled by graphitic carbon nitride. <b>2021</b> , 268, 118235		5
315	Boron nanosheets induced microstructure and charge transfer tailoring in carbon nanofibrous mats towards highly efficient water splitting. <b>2021</b> , 88, 106246		7
314	Promoting highly dispersed $Co_3O_4$ nanoparticles onto polyethylene unraveling the catalytic mechanism with stable catalytic activity for oxygen evolution reaction: From fundamentals to applications. <b>2021</b> , 46, 35261-35270		1
313	Mixed-dimensional niobium disulfide-graphene foam heterostructures as an efficient catalyst for hydrogen production. <b>2021</b> , 46, 33679-33688		3
312	Unraveling the synergistic effect of defects and interfacial electronic structure modulation of pealike $CoFe@Fe_3N$ to achieve superior oxygen reduction performance. <b>2021</b> , 295, 120314		22
311	Graphitic carbon nitride composites as electro catalysts: Applications in energy conversion/storage and sensing system. <b>2021</b> , 320, 128693		1
310	In-situ electrosynthesis Cu-PtBTC MOF-derived nanocomposite modified glassy carbon electrode for highly performance electrocatalysis of hydrogen evolution reaction. <b>2021</b> , 900, 115716		1

309	Single noble metal atoms doped 2D materials for catalysis. <b>2021</b> , 297, 120389	17
308	Recent progress on transition metal oxides as advanced materials for energy conversion and storage. <b>2021</b> , 42, 317-369	21
307	An acid-base molecular assembly strategy toward N-doped MoC@C nanowires with mesoporous MoC cores and ultrathin carbon shells for efficient hydrogen evolution. <b>2021</b> , 602, 520-533	6
306	Engineering dual defective graphenes to synergistically improve electrocatalytic hydrogen evolution. <b>2021</b> , 566, 150712	1
305	Mechanochemistry-driven prelinking enables ultrahigh nitrogen-doping in carbon materials for triiodide reduction. <b>2021</b> , 89, 106332	2
304	Multifunction Co-N <sub>x</sub> species to manipulate polysulfides conversion kinetics toward highly efficient lithium-sulfur batteries. <b>2021</b> , 89, 106426	6
303	Aligning potential differences within carbon nitride based photocatalysis for efficient solar energy harvesting. <b>2021</b> , 89, 106357	13
302	Preparation and application of 0D-2D nanomaterial hybrid heterostructures for energy applications. <b>2021</b> , 12, 100169	5
301	Advanced opportunities and insights on the influence of nitrogen incorporation on the physico-/electro-chemical properties of robust electrocatalysts for electrocatalytic energy conversion. <b>2021</b> , 449, 214209	7
300	Selective graphene-like metal-free 2D nanomaterials and their composites for photocatalysis. <b>2021</b> , 284, 131254	9
299	Natural DNA-derived highly-graphitic N, P, S-tridoped carbon nanosheets for multiple electrocatalytic applications. <b>2022</b> , 429, 132102	6
298	Metal-free 2D/2D CN/GO nanosheets with customized energy-level structure for radioactive nuclear wastewater treatment. <b>2022</b> , 422, 126912	9
297	Polymer-graphene composite in hydrogen production. <b>2022</b> , 639-682	
296	Unique ternary Ni-MOF-74/NiP/MoS composite for efficient photocatalytic hydrogen production: Role of NiP for accelerating separation of photogenerated carriers. <b>2022</b> , 605, 385-397	16
295	Advanced hydrogen evolution electrocatalysis enabled by ruthenium phosphide with tailored hydrogen binding strength via interfacial electronic interaction. <b>2022</b> , 429, 132557	3
294	Oxygen-containing groups and P doped porous carbon nitride nanosheets towards enhanced photocatalytic activity. <b>2022</b> , 287, 132399	0
293	PtRu alloy nanoparticles embedded on C <sub>2</sub> N nanosheets for efficient hydrogen evolution reaction in both acidic and alkaline solutions. <b>2022</b> , 428, 131085	3
292	Molecule functionalization to facilitate electrocatalytic oxygen reduction on graphdiyne. <b>2022</b> , 65, 141-148	6



291	Interfacial coupling perovskite CeFeO <sub>3</sub> on layered graphitic carbon nitride as a multifunctional Z-scheme photocatalyst for boosting nitrogen fixation and organic pollutants demineralization. <b>2022</b> , 427, 131406	9
290	Monolayer MoSi <sub>2</sub> N <sub>4</sub> as promising electrocatalyst for hydrogen evolution reaction: A DFT prediction. <b>2022</b> , 99, 215-222	4
289	Electrocatalysis of Lithium (Poly-) Sulfides in Organic Ether-Based Electrolytes. <b>2020</b> , 167, 166520	
288	MoS <sub>2</sub> Nanosheets on MoNi <sub>4</sub> /MoO <sub>2</sub> Nanorods for Hydrogen Evolution. <b>2021</b> , 4, 886-896	10
287	Porphyrin Conjugated Polymer Grafted onto BiVO <sub>4</sub> Nanosheets for Efficient Z-Scheme Overall Water Splitting via Cascade Charge Transfer and Single-Atom Catalytic Sites. <b>2021</b> , 11, 2003575	27
286	Electrochemically dealloyed nanoporous FeNiCoPC metallic glass for efficient and stable electrocatalytic hydrogen and oxygen generation.. <b>2021</b> , 11, 7369-7380	3
285	CHAPTER 3:Template-based Fabrication of Porous Carbon Nitride Nanostructures for Electrochemical Energy Conversion. <b>2021</b> , 80-126	1
284	Periodic nanostructures: preparation, properties and applications. <b>2021</b> , 50, 6423-6482	16
283	Ionic liquid functionalized carbon nanotubes as metal-free catalyst for efficient electrocatalytic hydrogen evolution reaction. <b>2021</b> , 13, 4444-4450	6
282	Atomically dispersed cobalt on graphitic carbon nitride as a robust catalyst for selective oxidation of ethylbenzene by peroxymonosulfate. <b>2021</b> , 9, 3029-3035	11
281	A crystalline/amorphous CoP@CoB hierarchical core-shell nanorod array for enhanced hydrogen evolution. <b>2021</b> , 9, 19719-19724	6
280	Recent advancements and opportunities of decorated graphitic carbon nitride toward solar fuel production and beyond. <b>2021</b> , 5, 4457-4511	8
279	In Situ Synthesis of Few-Layered g-C <sub>3</sub> N <sub>4</sub> with Vertically Aligned MoS <sub>2</sub> Loading for Boosting Solar-to-Hydrogen Generation. <b>2018</b> , 14, 1703003	71
278	Fe <sub>3</sub> C Nanorods Encapsulated in N-Doped Carbon Nanotubes as Active Electrocatalysts for Hydrogen Evolution Reaction. <b>2018</b> , 9, 264-270	22
277	Metal-free electrocatalysts for nitrogen reduction reaction. <b>2020</b> , 2, 100040	18
276	Catalyst Engineering for Electrochemical Energy Conversion from Water to Water: Water Electrolysis and the Hydrogen Fuel Cell. <b>2020</b> , 6, 653-679	30
275	Boron-rich environment boosting ruthenium boride on B, N doped carbon outperforms platinum for hydrogen evolution reaction in a universal pH range. <b>2020</b> , 75, 104881	43
274	Platinum single-atom and cluster catalysis of the hydrogen evolution reaction.	1

273	Electrosynthesis of CuO nanocrystal array as a highly efficient and stable electrocatalyst for oxygen evolution reaction. <b>2018</b> , 31, 806-812	3
272	Self-supported nickel sulfide derived from nickel foam for hydrogen evolution and oxygen evolution reaction: effect of crystal phase switching. <b>2021</b> , 32, 085710	6
271	Electrocatalytic hydrogen evolution using graphitic carbon nitride coupled with nanoporous graphene co-doped by S and Se. <b>2015</b> ,	1
270	Three-dimensional Nanoporous Graphene-based Materials and Their Applications. <b>2019</b> , 22, 243-255	3
269	Microbial electrolysis cells for electromethanogenesis: Materials, configurations and operations. <b>2022</b> , 27, 200484-0	4
268	Emerging two-dimensional nanomaterials for electrochemical nitrogen reduction. <b>2021</b> , 50, 12744-12787	10
267	Excellent Properties of Ni-15 wt.% W Alloy Electrodeposited from a Low-Temperature Pyrophosphate System. <b>2021</b> , 11, 1262	0
266	Understanding the roles of carbon in carbon/g-C <sub>3</sub> N <sub>4</sub> based photocatalysts for H <sub>2</sub> evolution. 1	1
265	A novel red phosphorus/reduced graphene oxide-C <sub>3</sub> N <sub>4</sub> composite with enhanced sodium storage capability. <b>2021</b> , 902, 115819	1
264	Tailoring the Pore Size, Basicity, and Binding Energy of Mesoporous C N for CO Capture and Conversion. <b>2021</b> , 16, 3999-4005	2
263	Synergistic Cascade Hydrogen Evolution Boosting via Integrating Surface Oxophilicity Modification with Carbon Layer Confinement. 2108991	8
262	Chalcogen Tailoring of Cobalt-Based Electrocatalytic Materials. 1-60	
261	Packing Sulfur Species by Phosphorene-Derived Catalytic Interface for Electrolyte-Lean LithiumSulfur Batteries. 2106966	5
260	Photocatalytic Degradation of Sulfamethoxazole, Nitenpyram and Tetracycline by Composites of Core Shell g-CN@ZnO, and ZnO Defects in Aqueous Phase. <b>2021</b> , 11,	3
259	Platinum Single Atoms Anchored on a Covalent Organic Framework: Boosting Active Sites for Photocatalytic Hydrogen Evolution. 13266-13279	24
258	Probing active sites on MnPSe <sub>3</sub> and FePSe <sub>3</sub> tri-chalcogenides as a design strategy for better hydrogen evolution reaction catalysts. <b>2021</b> , 46, 37928-37938	3
257	Nanocarbon Materials in Catalysis. 25-63	
256	Modeling of Non-Covalent Interactions of Vat Dyes with Carbon Nitride Fragments. <b>2018</b> , 10, 37-42	

255 Chapter 6:Design of Metal-free Nanocatalysts. **2019**, 163-183

254 Studies on the functionalization of carbon materials by pore development and metal inclusion. **2019**, 2019, 114-120

253 Metal-nitrogen intimacy of the nitrogen-doped ruthenium oxide for facilitating electrochemical hydrogen production. **2021**, 120873 4

252 Carbon-Based Metal-Free Electrocatalysts: Past, Present, and Future. 4

251 Integration of Nitrogen-Doped Graphene Oxide Dots with Au Nanoparticles for Enhanced Electrocatalytic Hydrogen Evolution. 2

250 H<sub>2</sub> Evolution Catalysts for Microbial Electrolysis Cells. **2020**, 27-43 2

249 Exploring Structure-function Relationship of Two-dimensional Electrocatalysts with Synchrotron Radiation X-ray Absorption Spectrum. **2020**, 1, 22-42 0

248 Earth-abundant electrocatalysts for sustainable energy conversion. **2022**, 131-168

247 Rational manipulation of 3D hierarchical oxygenated nickel tungsten selenide nanosheet as the efficient bifunctional electrocatalyst for overall water splitting. **2022**, 430, 132888 4

246 Localized surface plasmon resonance enhanced electrochemical nitrogen reduction reaction. **2022**, 301, 120808 2

245 Functionalized nanomaterials for electronics and electrical and energy industries. **2020**, 269-296 2

244 Highly Efficient Electrocatalytic Water Splitting. **2020**, 1-33

243 Improving Charge Separation in Cu<sub>2</sub>O/g-C<sub>3</sub>N<sub>4</sub>/CoS Photocathodes by a Z-Scheme Heterojunction to Achieve Enhanced Performance and Photostability. **2020**, 111-136 1

242 Graphitic Aza-fused Conjugated Networks: Construction, Engineering, and Task-Specific Applications. **2021**, e2107947 3

241 Single-Atom Co Doped in Ultrathin WO Arrays for the Enhanced Hydrogen Evolution Reaction in a Wide pH Range. **2021**, 13, 53915-53924 3

240 Functional role of single-atom catalysts in electrocatalytic hydrogen evolution: Current developments and future challenges. **2022**, 452, 214289 5

239 Low-cost single-atom transition metals on two-dimensional SnO nanosheets for efficient hydrogen evolution catalysis in all pH-range. **2022**, 578, 152021 1

238 Controllable synthesis and phase-dependent catalytic performance of dual-phase nickel selenides on Ni foam for overall water splitting. **2022**, 303, 120915 10

- 237 Main-group elements boost electrochemical nitrogen fixation. **2021**, 28
- 236 Engineering Nitrogen Vacancy in Polymeric Carbon Nitride for Nitrate Electroreduction to Ammonia. **2021**, 13, 54967-54973 5
- 235 Microwave-Assisted Auto-Combustion Synthesis of Binary/Ternary Co Ni Ferrite for Electrochemical Hydrogen and Oxygen Evolution.. **2021**, 6, 33024-33032 1
- 234 Applications of 1D Mesoporous Inorganic Nanomaterials in Electrocatalysis. **2022**, 175-182
- 233 Recent progress in direct urea fuel cell. **2021**, 19, 1116-1133 2
- 232 Electrocatalysis enabled transformation of earth-abundant water, nitrogen and carbon dioxide for a sustainable future. 1
- 231 NiCo Nitride/Carbon Nanoflakes as Low-cost Bifunctional Electrocatalysts for Carbohydrate-Assisted Electrolytic H<sub>2</sub> Generation. **2022**, 100948
- 230 Amorphous-crystalline heterostructure for simulated practical water splitting at high-current density. **2022**, 431, 134247 7
- 229 Enhanced light harvesting and charge separation of carbon and oxygen co-doped carbon nitride as excellent photocatalyst for hydrogen evolution reaction.. **2021**, 612, 367-376 1
- 228 Boosting hydrogen evolution activity of transition meta-nitrogen embedded graphene through introducing secondary transition metal. **2022**, 29, 101714
- 227 Metal-free C<sub>2</sub>N doped with sp<sup>2</sup> hybridized B atom as high efficiency photocatalyst for nitrobenzene reduction reaction: A density functional theory study. **2022**, 518, 112080 0
- 226 Immobilization of molecule-based ionic liquids: a promising approach to improve electrocatalyst performance towards the hydrogen evolution reaction. **2022**, 46, 454-464 1
- 225 Poly(ionic liquid)/graphene oxide-derived porous carbon materials as highly efficient electrocatalysts for hydrogen evolution reaction. **2022**, 28, 1311 0
- 224 A Review on Electrochemical and Photochemical Processes for Hydrogen Production. 1-66
- 223 Anchoring ultrafine molybdenum phosphide on hierarchical three-dimensional CNTs/rGO framework as efficient electrocatalysts for hydrogen evolution. **2022**, 33, 3175
- 222 Advances of the functionalized carbon nitrides for electrocatalysis. 0
- 221 Recent advances in non-precious group metal-based catalysts for water electrolysis and beyond. **2021**, 10, 50-88 4
- 220 Heteroatom-Doped Metal-Free Carbon Nanomaterials as Potential Electrocatalysts.. **2022**, 27, 1

219	Two-dimensional B7P2: Dual-purpose functional material for hydrogen evolution reaction/hydrogen storage. <b>2022</b> , 47, 8338-8347	0
218	Development and Functionalization of Visible-Light-Driven Water-Splitting Photocatalysts.. <b>2022</b> , 12,	3
217	Electrochemical Water Splitting: H <sub>2</sub> Evolution Reaction. <b>2022</b> , 59-89	0
216	Metal-organic framework-based electrocatalysts for ORR, OER, and HER. <b>2022</b> , 111-144	
215	Monodisperse Ni-clusters anchored on carbon nitride for efficient photocatalytic hydrogen evolution. <b>2022</b> , 43, 536-545	3
214	2D CeO and a Partially Phosphated 2D Ni-Based Metal-Organic Framework Formed an S-Scheme Heterojunction for Efficient Photocatalytic Hydrogen Evolution.. <b>2022</b> ,	14
213	Achieving highly exposed active sites of molybdenum carbide with the assistance of NH <sub>4</sub> Cl for efficient hydrogen evolution. <b>2022</b> , 583, 152576	0
212	Electron Irradiation Induces the Conversion from 2H-WSe <sub>2</sub> to 1T-WSe <sub>2</sub> and Promotes the Performance of Electrocatalytic Hydrogen Evolution.	1
211	Dissolution of the Heteroatom Dopants and Formation of Ortho-Quinone Moieties in the Doped Carbon Materials during Water Electrooxidation.. <b>2022</b> ,	4
210	Amorphization of Metal Nanoparticles by 2D Twisted Polymer for Super Hydrogen Evolution Reaction. 2102257	4
209	Atomically Dispersed Iron with Densely Exposed Active Sites as Bifunctional Oxygen Catalysts for Zinc-Air Flow Batteries.. <b>2021</b> , e2105892	2
208	The Role of Structured Carbon in Downsized Transition Metal-Based Electrocatalysts toward a Green Nitrogen Fixation. <b>2021</b> , 11, 1529	1
207	Encapsulated RuP-RuS nanoheterostructure with regulated interfacial charge redistribution for synergistically boosting hydrogen evolution electrocatalysis.. <b>2022</b> ,	0
206	MWCNT-modified MXene as cost-effective efficient bifunctional catalyst for overall water splitting.. <b>2022</b> , 12, 8405-8413	1
205	Increasing Oxygen Vacancy of CeO <sub>2</sub> Nanocrystals by Ni Doping and reduced Graphene Oxides Decoration towards the Electrocatalytic Hydrogen Evolution.	1
204	Selective Passivation of Three-Dimensional Carbon Microelectrodes by Polydopamine Electrodeposition and Local Laser Ablation.. <b>2022</b> , 13,	1
203	Templating synthesis of porous carbons for energy-related applications: A review. <b>2022</b> , 37, 25-45	2
202	Applications of Nickel-Based Electrocatalysts for Hydrogen Evolution Reaction. <b>2022</b> , 3, 2100189	3

201	Two-dimensional titanium carbonitride MXene as a highly efficient electrocatalyst for hydrogen evolution reaction. <b>2022</b> , 2, 100075	2
200	Theoretical Screening of Transition Metal-Embedded Ti <sub>2</sub> N for High-Efficiency Hydrogen Evolution Reaction. <b>2022</b> , 10, 4152-4160	2
199	Priority Occupation of C-Sites by N-Confining P-Implantation in Pyrrodic N-Sites in NCNT@P,N-MoC for Highly Efficient Electrocatalytic Hydrogen Evolution.. <b>2022</b> ,	0
198	Synergetic Function of the Single-Atom Ru-N Site and Ru Nanoparticles for Hydrogen Production in a Wide pH Range and Seawater Electrolysis.. <b>2022</b> ,	6
197	Construct 3D NiCo-LDH/Cu <sub>2</sub> O p-n heterojunction via electrostatic self-assembly for enhanced photocatalytic hydrogen evolution. <b>2022</b> ,	2
196	Non-Covalent Functionalization of Graphene Oxide-Supported 2-Picolylamine-Based Zinc(II) Complexes as Novel Electrocatalysts for Hydrogen Production. <b>2022</b> , 12, 389	0
195	Transition metal carbides coupled with nitrogen-doped carbon as efficient and stable Bi-functional catalysts for oxygen reduction reaction and hydrogen evolution reaction. <b>2022</b> , 47, 13240-13250	1
194	Electrocatalytic properties of scandium metallofullerenes for the hydrogen evolution reaction. <b>2022</b> , 47, 11904-11915	0
193	A Novel 3D Yolk-Shell Au@CdS/g-C <sub>3</sub> N <sub>4</sub> Nanostructure with Enhanced Photoelectrochemical and Photocatalytic Properties. <b>2022</b> , 126, 4939-4947	0
192	Unusual Activity of Rationally Designed Cobalt Phosphide/Oxide Heterostructure Composite for Hydrogen Production in Alkaline Medium.. <b>2022</b> ,	6
191	Modulation of the B <sub>4</sub> N monolayer as an efficient electrocatalyst for hydrogen evolution reaction. <b>2022</b> , 47, 11511-11519	0
190	Disclosing the active integration structure and robustness of a pseudo-tri-component electrocatalyst toward alkaline hydrogen evolution. <b>2022</b> ,	0
189	Edge-halogenated graphene nanosheets as an efficient metal-free electrocatalyst for hydrogen evolution reaction. <b>2022</b> ,	2
188	Recent advancements in the cathodic catalyst for the hydrogen evolution reaction in a microbial electrolysis cells. <b>2022</b> ,	1
187	Engineering the Morphology and Microenvironment of a Graphene-Supported Co-N-C Single-Atom Electrocatalyst for Enhanced Hydrogen Evolution.. <b>2022</b> , e2201139	2
186	From Fundamentals and Theories to Heterostructured Electrocatalyst Design: An In-depth Understanding of Alkaline Hydrogen Evolution Reaction. <b>2022</b> , 107231	7
185	Atomically dispersed ultralow-platinum loading on Ti <sub>3</sub> C <sub>2</sub> T MXene as efficient catalyst for hydrogen evolution reaction. <b>2022</b> , 411, 140091	1
184	Copper-involved highly efficient oxygen reduction reaction in both alkaline and acidic media. <b>2022</b> , 437, 135377	2

183	Highly ordered nanoarrays catalysts embedded in carbon nanotubes as highly efficient and robust air electrode for flexible solid-state rechargeable zinc-air batteries.. <b>2022</b> , 616, 679-690	1
182	Organic dyes with multi-branched structures for highly efficient photocatalytic hydrogen evolution under visible-light irradiation. <b>2022</b> , 309, 121257	1
181	Atomically dispersed Pt-O coordination boosts highly active and durable acidic hydrogen evolution reaction. <b>2022</b> , 440, 135957	0
180	The dehydrogenation of butane on metal-free graphene.. <b>2022</b> , 619, 377-387	1
179	NaCl-Assisted Ultrasmall Mo <sub>2</sub> C Nanocrystals Confined in N, S Double-Doped Hierarchical Porous Carbon for Efficient Hydrogen Generation. <b>2021</b> , 4, 14432-14439	0
178	Metallic glasses and metallic glass nanostructures for functional electrocatalytic applications. <b>2021</b> ,	1
177	Scalable synthesis of multi-shelled hollow N-doped carbon nanosheet arrays with confined Co/CoP heterostructures from MOFs for pH-universal hydrogen evolution reaction. <b>2022</b> , 65, 619-629	1
176	Nickel and Nitrogen-Doped Bifunctional ORR and HER Electrocatalysts Derived from CO <sub>2</sub> . <b>2022</b> , 10, 134-145	3
175	Challenges of modeling nanostructured materials for photocatalytic water splitting.. <b>2022</b> ,	5
174	Structures, stabilities, optoelectronic and photocatalytic properties of Janus aluminium mono-chalcogenides Al(Ga, In)STe monolayers. <b>2022</b> , 115229	
173	Properties and applications of quantum dots derived from two-dimensional materials. <b>2022</b> , 7,	
172	Enhanced Hydrazine Oxidation on Histidine-Functionalized Graphene-Based Electrocatalysts.	
171	Trifunctional Catalysts for Overall Water Splitting and Oxygen Reduction Reaction Derived from Co,Ni MOFs. 1	
170	Fabrication of phosphorus-mediated MoS <sub>2</sub> nanosheets on carbon cloth for enhanced hydrogen evolution reaction. <b>2022</b> ,	0
169	Table_1.DOCX. <b>2019</b> ,	
168	Data_Sheet_1.docx. <b>2019</b> ,	
167	Missing-Linker Bifunctional Mil-125(Ti)-Zn Interface Modulation Layer to Simultaneously Suppress Hydrogen Evolution Reaction and Dendrites for Zn Metal Anodes.	
166	Grain Boundary Route to Enhance Electrocatalytic Activity for Hydrogen Evolution Reaction. <b>2022</b> , 12, 4290	

165	Advances in Carbon Nitride-Based Materials and Their Electrocatalytic Applications. <b>2022</b> , 12, 5605-5660	3
164	Electrochemical fabrication of ultrafine g-C <sub>3</sub> N <sub>4</sub> quantum dots as a catalyst for the hydrogen evolution reaction. <b>2022</b> , 37, 392-399	1
163	Interfacial engineering of carbon-based materials for efficient electrocatalysis: Recent advances and future. <b>2022</b> , 100074	3
162	Electronic Structure Optimization of PdZn-Graphitic Carbon Nitride Nanocomposites as Electrocatalysts for Selective CO <sub>2</sub> to CO Conversion.	1
161	Paired formate and H <sub>2</sub> productions via efficient bifunctional Ni-Mo nitride nanowire electrocatalysts. <b>2022</b> ,	1
160	Formation of a p-n heterojunction photocatalyst by the interfacing of graphitic carbon nitride and delafossite CuGaO <sub>2</sub> .	0
159	Enhancing the photocatalytic performance of g-C <sub>3</sub> N <sub>4</sub> by using iron single-atom doping for the reduction of U(VI) in aqueous solutions. <b>2022</b> , 312, 123160	0
158	Hybrid TiNb oxides/nitrides nanotube arrays as active catalyst supports. <b>2022</b> , 914, 165267	1
157	Tuning electronic, magnetic and catalytic behaviors of biphenylene network by atomic doping.. <b>2022</b> ,	5
156	Ni(NO <sub>3</sub> ) <sub>2</sub> -induced high electrocatalytic hydrogen evolution performance of self-supported fold-like WC coating on carbon fiber paper prepared through molten salt method. <b>2022</b> , 140553	2
155	Transparent, High-Performance and Stable Sb S Photoanode Enabled by Heterojunction Engineering with Conjugated Polycarbazole Frameworks for Unbiased Photoelectrochemical Overall Water Splitting Devices.. <b>2022</b> , e2200723	3
154	Heterogeneous carbon metal-free catalysts. <b>2022</b> , 195-212	
153	Nanocarbon-based metal-free catalysts. <b>2022</b> , 1-19	
152	Boosting the hydrogen evolution reaction of N-C@CoP through an N atom induced p-d orbital coupling. <b>2022</b> , 446, 137132	
151	Missing-Linker Bifunctional Mil-125(Ti)-Zn Interface Modulation Layer to Simultaneously Suppress Hydrogen Evolution Reaction and Dendrites for Zn Metal Anodes.	
150	First-row transition metal-based materials derived from bimetallic metal-organic frameworks as highly efficient electrocatalysts for electrochemical water splitting.	5
149	Electrochemical activated nitrogen-doped carbon as highly efficient electrocatalysts for hydrogen evolution reactions.	0
148	Synergetic Effect during the Electrocatalytic Reaction of Hydrogen Production in the Presence of 2,2'-Bipyridine. <b>2022</b> , 96, 954-957	



- 147 NiO boosted Pt-shell for efficient hydrogen evolution reaction. **2022**, 100170
- 146 Electrocatalytic Hydrogen Evolution Using A Molecular Antimony Complex under Aqueous Conditions: An Experimental and Computational Study on Main-Group Element Catalysis.
- 145 Fe-Doped Porous g-C 3 N 4 : An Efficient Electrocatalyst with Fe-N Active Sites for Electrocatalytic Hydrogen Evolution Reaction under Alkaline Conditions. **2022**, 7,
- 144 Chemically functionalized phosphorenes and their use in the water splitting reaction. 0
- 143 Stitching Electron Localized Heptazine Units with Carbon Patches to Regulate Exciton Dissociation Behavior of Carbon Nitride for Photocatalytic Elimination of Petroleum Hydrocarbons.
- 142 Doping-engineered biphenylene as a metal-free electrocatalyst for the hydrogen evolution reaction. 0
- 141 Oxygen reduction reaction by metal-free catalysts. **2022**, 241-275
- 140 Exciton Transport and Interfacial Charge Transfer in Semiconductor Nanocrystals and Heterostructures. **2022**, 985-1012
- 139 Direct Growth of Carbon Nitride (C 3 N 3 ) Nanosheets on Copper Foam as an Efficient Catalytic Electrode for Electrochemical Hydrogen Evolution. **2022**, 9,
- 138 Water Reduction Photocathodes Based on Ru Complex Dyes Covered with a Conjugated Polymer Nanosheet. 1
- 137 Heterogeneous interface induced electrocatalytic efficiency boosting of bimetallic Cu/Zn selenides for stable water oxidation and oxygen reduction reactions.
- 136 Graphene oxide-based materials in electrocatalysis. **2022**, 189-238
- 135 Theoretical Advances in Understanding and Designing the Active Sites for Hydrogen Evolution Reaction. **2022**, 12, 8404-8433 10
- 134 Magic hybrid structure as multifunctional electrocatalyst surpassing benchmark Pt/C enables practical hydrazine fuel cell integrated with energy-saving H<sub>2</sub> production. **2022**, 4
- 133 Manganese Phosphorous Trifulfide Nanosheets and Nitrogen doped Carbon Dot Composites with Manganese Vacancies for a Greatly Enhanced Hydrogen Evolution. **2022**, 0
- 132 Metal-Organic-Framework-derived Co Nanoparticles Embedded in P, N-Dual-doped Porous Carbon/rGO Catalyst for Water Splitting and Oxygen Reduction. 0
- 131 Exposing Single-Ni Atoms in Hollow S/N-doped Carbon Macroporous Fibers for Highly Efficient Electrochemical Oxygen Evolution. 2203442 4
- 130 Intrinsic Catalytic Activity of Carbon Nanotubes for Electrochemical Nitrate Reduction. 9135-9142 1

129	Two-dimensional conductive $\pi$ -conjugated metal-organic frameworks as promising electrocatalysts for highly efficient hydrogen evolution reaction. <b>2022</b> , 601, 154241	1
128	Enhanced electrocatalytic full water-splitting reaction by interfacial electric field in 2D/2D heterojunction. <b>2022</b> , 450, 137789	1
127	Carbide-directed enhancement of electrochemical hydrogen evolution reaction on tungsten carbide $\pi$ -oxide heterostructure. <b>2022</b> , 450, 137915	0
126	Defect-rich ultrathin poly-heptazine-imide-framework nanosheets with alkali-ion doping for photocatalytic solar hydrogen and selective benzylamine oxidation.	1
125	Microwave-assisted synthesis of iridium oxide and palladium nanoparticles supported on a nitrogen-rich covalent triazine framework as superior electrocatalysts for the hydrogen evolution and oxygen reduction reaction. 10,	1
124	Carbon-based metal-free electrocatalysts: Recent progress and forward looking. <b>2022</b> ,	1
123	Atomically precise thiolate-protected gold nanoclusters: Current status of designability of the structure and physicochemical properties.	0
122	Two birds with one stone: Engineering polymeric carbon nitride with $n$ - $\pi$ electronic transition for extended light absorption and reduced charge recombination. <b>2022</b> , 100077	0
121	N, O-doped carbon foam as metal-free electrocatalyst for efficient hydrogen production from seawater.	3
120	Molybdenum-based electrocatalysts with nanostructured supports for hydrogen evolution reaction.	
119	Tailor-designed bimetallic Co/Ni macroporous electrocatalyst for efficient glycerol oxidation and water electrolysis. <b>2022</b> ,	3
118	A review of heteroatomic doped two-dimensional materials as electrocatalysts for hydrogen evolution reaction. <b>2022</b> ,	1
117	Strategies for Designing High-Performance Hydrogen Evolution Reaction Electrocatalysts at Large Current Densities above 1000 mA cm $^{-2}$ . <b>2022</b> , 16, 11577-11597	3
116	CO $_2$ Conversion on N-Doped Carbon Catalysts via Thermo- and Electrocatalysis: Role of C $\pi$ O $x$ Moieties. <b>2022</b> , 12, 10127-10140	
115	Potassium-Assisted Fabrication of Intrinsic Defects in Porous Carbons for Electrocatalytic CO $_2$ Reduction. 2205933	4
114	Room-temperature Electrochemical C $_1$ -to-fuel Conversion: Perspectives from Material Engineering and Device Design. <b>2022</b> , 4, 100086	1
113	Application of heteroatom doping strategy in electrolyzed water catalytic materials. <b>2022</b> , 921, 116679	0
112	A facile complexing agent-assistant single atom Ag-N $_3$ S $_1$ site photodeposition strategy. <b>2022</b> , 318, 121896	1

111	Ru decorated Co nanoparticles supported by N-doped carbon sheet implements Pt-like hydrogen evolution performance in wide pH range. <b>2022</b> , 450, 138254	0
110	Design strategies of perovskite nanofibers electrocatalysts for water splitting: A mini review. <b>2023</b> , 451, 138710	3
109	Tuning Metal-Free Hierarchical Boron Nitride-like Catalyst for Enhanced Photocatalytic CO <sub>2</sub> Reduction Activity. 12217-12226	0
108	Missing-linker bifunctional MIL-125(Ti)-Zn interface modulation layer to simultaneously suppress hydrogen evolution reaction and dendrites for Zn metal anodes. <b>2022</b> , 53, 322-330	2
107	Stitching electron localized heptazine units with carbon patches to regulate exciton dissociation behavior of carbon nitride for photocatalytic elimination of petroleum hydrocarbons. <b>2023</b> , 452, 139092	0
106	Strong electronic coupling between single Ru atoms and cobalt-vanadium layered double hydroxide harness efficient water splitting. <b>2023</b> , 452, 139151	3
105	Carbon-Based Nanomaterials for Hydrogen Evolution Reaction. <b>2022</b> , 123-146	0
104	Introduction. <b>2022</b> , 1-46	0
103	Doping P atom with a lone pair: an effective strategy to realize high HER catalytic activity and avoid deactivation under wide H <sup>*</sup> coverage on 2D silicene and germanene by increasing the structural rigidity. <b>2022</b> , 14, 10918-10928	0
102	Recent advances in solution assisted synthesis of transition metal chalcogenides for photo-electrocatalytic hydrogen evolution. <b>2022</b> , 24, 20638-20673	3
101	Photoelectrochemical water splitting with a triazine based covalent organic framework. <b>2022</b> , 6, 4248-4255	0
100	A Facile Complexing Agent-Assistant Single Atom Ag-N <sub>3</sub> s <sub>1</sub> Site Photodeposition Strategy.	0
99	Engineering the solid-liquid interfaces for photoelectrochemical water reduction. <b>2023</b> ,	0
98	Impacts of ruthenium valence state on the electrocatalytic activity of ruthenium ion-complexed graphitic carbon nitride/reduced graphene oxide nanosheets towards hydrogen evolution reaction. <b>2023</b> , 629, 591-597	0
97	Real-Space Identification of Non-Noble Single Atomic Catalytic Sites within Metal-Coordinated Supramolecular Networks. <b>2022</b> , 16, 14284-14296	1
96	Surface-Exposed Single-Ni Atoms with Potential-Driven Dynamic Behaviors for Highly Efficient Electrocatalytic Oxygen Evolution.	5
95	Unraveling the Role of Defects in Electrocatalysts for Water Splitting: Recent Advances and Perspectives. <b>2022</b> , 36, 11660-11690	1
94	Discovery of Hydrogen Spillover-Based Binary Electrocatalysts for Hydrogen Evolution: From Theory to Experiment. <b>2022</b> , 12, 11821-11829	0

93	Surface-Exposed Single-Ni Atoms with Potential-Driven Dynamic Behaviors for Highly Efficient Electrocatalytic Oxygen Evolution.	0
92	Rhodium nanocrystals on porous graphdiyne for electrocatalytic hydrogen evolution from saline water. <b>2022</b> , 13,	6
91	Electronic Properties and Electrocatalytic Water Splitting Activity for Precious-Metal-Adsorbed Silicene with Nonmetal Doping. <b>2022</b> , 7, 33156-33166	0
90	Two-dimensional double transition metal carbides as superior bifunctional electrocatalysts for overall water splitting. <b>2022</b> , 141257	0
89	Individual and Simultaneous Electrochemical Detection of Bisphenol A and Bisphenol S in Food Samples Using Triethylenetetramine Functionalized Multi-Walled Carbon Nanotubes.	0
88	Integrating Vacancy Engineering and Energy-Level Adapted Coupling of Electrocatalyst for Enhancement of Carbon Dioxide Conversion. <b>2022</b> , 122037	0
87	Recent Advances in g-C <sub>3</sub> N <sub>4</sub> -Based Donor-Acceptor Photocatalysts for Photocatalytic Hydrogen Evolution: An Exquisite Molecular Structure Engineering. 2166-2186	2
86	RuO <sub>2</sub> nanoparticles decorated TiO <sub>2</sub> nanobelt array as a highly efficient electrocatalyst for hydrogen evolution reaction at all pH values.	4
85	Theoretical Study of Oxygen Reduction Reaction Mechanism in Metal-Free Carbon Materials: Defects, Structural Flexibility, and Chemical Reaction. <b>2022</b> , 16, 16394-16401	1
84	Carbon Nanotubes Encapsulated Transition Metals for Efficient Hydrogen Evolution Reaction: Coupling Effect of 3d Orbital and $\pi$ Bond.	0
83	A short review on generation of green fuel hydrogen through water splitting. <b>2022</b> ,	2
82	Improving the HER Activity and Stability of Pt Nanoparticles by Titanium Oxynitride Support. <b>2022</b> , 12, 13021-13033	0
81	Graphene wrapped nickel phthalocyanine nanohybrid: Efficient electrocatalyst for nitrogen reduction reaction. <b>2022</b> ,	0
80	Heterostructure Engineering of 2D Superlattice Materials for Electrocatalysis. 2204297	1
79	Two-dimensional carbon-based heterostructures as bifunctional electrocatalysts for water splitting and metal-air batteries. <b>2022</b> ,	0
78	Accelerated water activation and stabilized metal-organic framework via constructing triangular active-regions for ampere-level current density hydrogen production. <b>2022</b> , 13,	1
77	Perspective of p-block single-atom catalysts for electrocatalysis. <b>2022</b> ,	0
76	Single-Atom Transition Metal Photocatalysts for Hydrogen Evolution Reactions. <b>2022</b> , 12, 1304	1

75	Conductive and Ultrastable Covalent Organic Framework/Carbon Hybrid as an Ideal Electrocatalytic Platform. <b>2022</b> , 144, 19973-19980	0
74	A facile method to introduce a donor-acceptor system into polymeric carbon nitride for efficient photocatalytic overall water splitting. <b>2022</b> ,	0
73	The influence of Chinese scholars on global research. <b>2022</b> , 12,	0
72	Covalently interconnected layers in g-C <sub>3</sub> N <sub>4</sub> : Toward high mechanical stability, catalytic efficiency and sustainability. <b>2023</b> , 322, 122069	1
71	Surface and Lattice Engineered Ruthenium Superstructures towards High-Performance Bifunctional Hydrogen Catalysis.	1
70	Fabrication of 3D ordered mesoporous nickel phosphide for efficient hydrogen evolution reaction. <b>2022</b> ,	0
69	Multifunctional catalytic activity of Cu <sub>3</sub> N (001) surface: A first-principles study. <b>2022</b> ,	0
68	Engineering Coupled NiS <sub>x</sub> -WO <sub>2.9</sub> heterostructure as pH-Universal Electrocatalyst for Hydrogen Evolution Reaction.	0
67	Rational Design of NiSe/ReSe <sub>2</sub> Nanocomposite For Efficient Electrochemical Hydrogen Evolution Reaction.	0
66	Amorphous Co-Mo-B Film: A High-Active Electrocatalyst for Hydrogen Generation in Alkaline Seawater. <b>2022</b> , 27, 7617	4
65	Aerogels-Inspired based Photo and Electrocatalyst for Water Splitting to Produce Hydrogen. <b>2022</b> , 29, 101670	0
64	Recent progress on design and applications of transition metal chalcogenide-associated electrocatalysts for the overall water splitting. <b>2023</b> , 44, 7-49	0
63	Amorphous structure and sulfur doping synergistically inducing defect-rich short carbon nanotubes as a superior anode material in lithium-ion batteries. <b>2023</b> , 440, 141697	0
62	Integration of amorphous CoSnO <sub>3</sub> onto wrinkled MXene nanosheets as efficient electrocatalysts for alkaline hydrogen evolution. <b>2023</b> , 308, 122947	0
61	Ultrathin origami accordion-like structure of vacancy-rich graphitized carbon nitride for enhancing CO <sub>2</sub> photoreduction.	0
60	Defects and doping engineered two-dimensional o-B <sub>2</sub> N <sub>2</sub> for hydrogen evolution reaction catalyst: Insights from DFT simulation. <b>2022</b> ,	0
59	Regulating the Metal-Support Interaction: Double Jump to Reach the Efficiency Apex of the Fe <sub>N</sub> <sub>4</sub> -Catalyzed Fenton-like Reaction. <b>2022</b> , 12, 14954-14963	0
58	Recent progress in carbon-based electrochemical catalysts: From structure design to potential applications. <b>2022</b> ,	1

- 57 Design of XS<sub>2</sub> (X=W or Mo)-Decorated VS<sub>2</sub> Hybrid Nano-Architectures with Abundant Active Edge Sites for High-Rate Asymmetric Supercapacitors and Hydrogen Evolution Reactions. 2205881 ○
- 56 Synchronous regulation of morphology and electronic structure of FeNi-P nanosheet arrays by Zn implantation for robust overall water splitting. ○
- 55 Recent progress of two-dimensional heterostructures for thermoelectric applications. **2023**, 35, 073001 1
- 54 Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> nanosheets with uniformly anchored Ru nanoparticles for efficient acidic and basic hydrogen evolution reaction. **2022**, ○
- 53 Fundamentals and Functional Mechanisms of Photocatalysis in Water Treatment. **2022**, 1-37 ○
- 52 Transition Metals Incorporated on Phosphorene Sheet as Cost-Effective Single Atom Catalysts for Hydrogen Evolution Reaction: A DFT Study. **2022**, 113998 ○
- 51 Impact of single Pt atom adsorption on fundamental properties of blue phosphorene and its activity toward hydrogen evolution reaction. **2023**, ○
- 50 Mechanism Exploration and Catalyst Design for Hydrogen Evolution Reaction Accelerated by Density Functional Theory Simulations. **2023**, 11, 467-481 ○
- 49 Pd-based Metallic Glasses as Promising Materials for Hydrogen Energy Applications. ○
- 48 N-doped Carbon Nanotubes with High Amount of Graphitic Nitrogen as an Excellent Electrocatalyst for Water Splitting in Alkaline Solution. **2023**, 117160 ○
- 47 Two-dimensional Ruthenium Boride: A Dirac Nodal Loop Quantum Electrocatalyst for Efficient Hydrogen Evolution Reaction. ○
- 46 Hydrogen evolution boosted by moderate Co<sub>3</sub>ZnC with current densities beyond 1000 mA cm<sup>-2</sup>. ○
- 45 Functional Surfactant-Induced Long-Range Compressive Strain in Curved Ultrathin Nanodendrites Boosts Electrocatalysis. ○
- 44 Graphitic carbon nitride embedded with single-atom Pt for photo-enhanced electrocatalytic hydrogen evolution reaction. **2023**, 615, 156372 ○
- 43 Amorphous Co-P Film: an Efficient Electrocatalyst for Hydrogen Evolution Reaction in Alkaline Seawater. ○
- 42 S-doped C<sub>3</sub>N<sub>5</sub> derived from thiadiazole for efficient photocatalytic hydrogen evolution. ○
- 41 Activating the hydrogen evolution reaction in low-dimensional carbon by partial hydrogenation: Role of the hybrid sp<sup>2</sup>-sp<sup>3</sup> orbital interface. **2023**, ○
- 40 Two-dimensional MX<sub>2</sub>Y<sub>4</sub> systems: ultrahigh carrier transport and excellent hydrogen evolution reaction performances. **2023**, 25, 4519-4527 ○

- 39 Interface engineering of 0D/1D Cu<sub>2</sub>NiSnS<sub>4</sub>/TiO<sub>2</sub>(B) p/n heterojunction nanowires for efficient photocatalytic hydrogen evolution. **2023**, ○
- 38 Construction of Co-decorated 3D nitrogen doped-carbon nanotube/Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub>-MXene as efficient hydrogen evolution electrocatalyst. **2023**, ○
- 37 Semiconducting Quantum Dots for Energy Conversion and Storage. 2213770 1
- 36 Hollow Carbon Cages Derived from Polyoxometalate-Encapsulated Metal-Organic Frameworks for Energy-Saving Hydrogen Production. **2023**, 15, 1
- 35 Role of nanocomposites in hydrogen production. **2023**, 149-173 ○
- 34 Progress in electrocatalytic hydrogen evolution of transition metal alloys: synthesis, structure, and mechanism analysis. ○
- 33 Rational design of 2D/2D CS/SiC van der Waals type-II heterojunctions: a visible-light-driven photocatalyst for hydrogen production. ○
- 32 Lattice Distorted Rhodium Nanocrystals in Porous Nanofiber toward Aqueous Zinc-CO<sub>2</sub> System. **2023**, 5, 1271-1280 ○
- 31 Singlet Oxygen Induced Site-Specific Etching Boosts Nitrogen-Carbon Sites for High-Efficiency Oxygen Reduction. ○
- 30 Cd doped Ni<sub>3</sub>S<sub>2</sub> nanosheet arrays grown on nickel foam as highly efficient and robust bifunctional electrocatalysts for alkaline overall water splitting. **2023**, 170072 ○
- 29 A Review on the Synthesis, Properties, and Characterizations of Graphitic Carbon Nitride (g-C<sub>3</sub>N<sub>4</sub>) for Energy Conversion and Storage Applications. **2023**, 101080 ○
- 28 Fabrication of 3D-interconnected microporous carbon decorated with microspheres for highly efficient hydrogen evolution reactions. **2023**, 189, 108571 ○
- 27 Unifying the origin of catalytic activities for carbon-based metal-free electrocatalysts. **2023**, 418, 114129 ○
- 26 Robust Fe-N<sub>4</sub> center with optimized metal-support interaction for efficient pollutant degradation by Fenton-like reaction. **2023**, 331, 122706 ○
- 25 Facile synthesis of C, N, P co-doped SiO<sub>2</sub> as anode material for lithium-ion batteries with excellent rate performance. **2023**, 64, 107147 ○
- 24 The origin of selective nitrate-to-ammonia electroreduction on metal-free nitrogen-doped carbon aerogel catalysts. **2023**, 331, 122677 ○
- 23 High-throughput screening of H<sub>2</sub> production catalysts from doped In<sub>2</sub>SSe monolayer: Valence electrons-based descriptor. **2023**, 224, 112179 ○
- 22 Developments in electrocatalysts for electrocatalytic hydrogen evolution reaction with reference to bio-inspired phthalocyanines. **2023**, ○

- 21 Graphitic Carbon Nitride (g-CN) for Sustainable Hydrogen Production. **2023**, 417-440 ○
- 20 BCN nanostructures conjugated nanoporous carbon with oxygenated surface and high specific surface area for enhanced CO<sub>2</sub> capture and supercapacitance. **2023**, 460, 141793 ○
- 19 Metal-Free Carbon Nitride Nanosheet Supported the Pentacoordinated Silicon Intermediates for Photocatalytic Overall Water Splitting. **2023**, 14, 1918-1927 ○
- 18 Organic small molecular heterostructures for enhanced photocatalytic hydrogen evolution via isomer engineering. **2023**, 11, 5937-5944 ○
- 17 Hydrogen-assisted neutralization flow battery with high power and energy densities. **2023**, 564, 232818 ○
- 16 The Precision Defect Engineering with Nonmetallic Element Refilling Strategy in g-C<sub>3</sub>N<sub>4</sub> for Enhanced Photocatalytic Hydrogen Production. 2208117 ○
- 15 Effect of terminations on the hydrogen evolution reaction mechanism on Ti<sub>3</sub>C<sub>2</sub> MXene. **2023**, 11, 6886-6900 ○
- 14 Design of Porous Carbon-Based Electro-Catalyst for Hydrogen Generation. **2023**, 285-322 ○
- 13 Anchoring ultra-small molybdenum oxide species on covalent triazine frameworks for efficient electrochemical nitrogen fixation. **2023**, 59, 4352-4355 ○
- 12 The charge effects on the hydrogen evolution reaction activity of the defected monolayer MoS<sub>2</sub>. **2023**, 25, 10956-10965 ○
- 11 Singlet Oxygen Induced Site-Specific Etching Boosts Nitrogen-Carbon Sites for High-Efficiency Oxygen Reduction. ○
- 10 Silver-decorated cobalt-molybdenum oxide nanosheets as a pH-universal electrocatalyst for high-efficiency hydrogen evolution reaction. **2023**, 122, 123906 ○
- 9 NiMo-MOF-Derived Carbon-Armored Ni<sub>4</sub>Mo Alloy of an Interwoven Nanosheet Structure as an Outstanding pH-Universal Catalyst for Hydrogen Evolution Reaction at High Current Densities. ○
- 8 Atomic Nickel on Graphitic Carbon Nitride as a Visible Light-Driven Hydrogen Production Photocatalyst Studied by X-ray Spectromicroscopy. **2023**, 11, 5390-5399 ○
- 7 Polymeric Carbon Nitrides for Photoelectrochemical Applications: Ring Opening-Induced Degradation. **2023**, 13, 1248 ○
- 6 Emerging Graphitic Carbon Nitride-based Nanobiomaterials for Biological Applications. **2023**, 6, 1339-1367 ○
- 5 Facile preparation of metal-free graphitic-like carbon nitride/graphene oxide composite for simultaneous determination of uric acid and dopamine. **2023**, 190, 108726 ○
- 4 Viologen-Based Covalent Organic Frameworks toward Metal-Free Highly Efficient Photocatalytic Hydrogen Evolution. **2023**, 15, 18836-18844 ○



- 3 In Situ Construction of High-Density Solid Electrolyte Interphase from MOFs for Advanced Zn Metal Anodes. ○
- 2 Intrinsic Carbon Structural Imperfections for Enhancing Energy Conversion Electrocatalysts. **2023**, 143060 ○
- 1 Single-atom Cu anchored on N-doped graphene/carbon nitride heterojunction for enhanced photocatalytic H<sub>2</sub>O<sub>2</sub> production. **2023**, 161, 192-200 ○