

# Mingwang Shao

## List of Publications by Year in descending order

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103  
papers

4,664  
citations

81743

39  
h-index

114278

63  
g-index

103  
all docs

103  
docs citations

103  
times ranked

4985  
citing authors

#	ARTICLE	IF	CITATIONS
1	A rhodium/silicon co-electrocatalyst design concept to surpass platinum hydrogen evolution activity at high overpotentials. <i>Nature Communications</i> , 2016, 7, 12272.	5.8	272
2	Excellent Photocatalysis of HF-Treated Silicon Nanowires. <i>Journal of the American Chemical Society</i> , 2009, 131, 17738-17739.	6.6	209
3	A metal-free photocatalyst for highly efficient hydrogen peroxide photoproduction in real seawater. <i>Nature Communications</i> , 2021, 12, 483.	5.8	193
4	Rh <sub>2</sub> MoS <sub>2</sub> Nanocomposite Catalysts with Pt-Like Activity for Hydrogen Evolution Reaction. <i>Advanced Functional Materials</i> , 2017, 27, 1700359.	7.8	185
5	Carbon dots promote the growth and photosynthesis of mung bean sprouts. <i>Carbon</i> , 2018, 136, 94-102.	5.4	182
6	High capacitance and rate capability of a Ni <sub>3</sub> S <sub>2</sub> @CdS core-shell nanostructure supercapacitor. <i>Journal of Materials Chemistry A</i> , 2017, 5, 7165-7172.	5.2	132
7	One-step hydrothermal synthesis of chiral carbon dots and their effects on mung bean plant growth. <i>Nanoscale</i> , 2018, 10, 12734-12742.	2.8	128
8	Efficient production of H <sub>2</sub> O <sub>2</sub> via two-channel pathway over ZIF-8/C <sub>3</sub> N <sub>4</sub> composite photocatalyst without any sacrificial agent. <i>Applied Catalysis B: Environmental</i> , 2020, 278, 119289.	10.8	110
9	Network-like mesoporous NiCo <sub>2</sub> O <sub>4</sub> grown on carbon cloth for high-performance pseudocapacitors. <i>Journal of Materials Chemistry A</i> , 2015, 3, 16520-16527.	5.2	107
10	Approaching the Volcano Top: Iridium/Silicon Nanocomposites as Efficient Electrocatalysts for the Hydrogen Evolution Reaction. <i>ACS Nano</i> , 2019, 13, 2786-2794.	7.3	106
11	Carbon cloth supported cobalt phosphide as multifunctional catalysts for efficient overall water splitting and zinc-air batteries. <i>Nanoscale</i> , 2017, 9, 18977-18982.	2.8	92
12	High-performance NiO/g-C <sub>3</sub> N <sub>4</sub> composites for visible-light-driven photocatalytic overall water splitting. <i>Inorganic Chemistry Frontiers</i> , 2018, 5, 1646-1652.	3.0	92
13	Phosphorus-doped porous carbon nitride for efficient sole production of hydrogen peroxide via photocatalytic water splitting with a two-channel pathway. <i>Journal of Materials Chemistry A</i> , 2020, 8, 3701-3707.	5.2	89
14	Carbon nitride assisted 2D conductive metal-organic frameworks composite photocatalyst for efficient visible light-driven H <sub>2</sub> O <sub>2</sub> production. <i>Applied Catalysis B: Environmental</i> , 2021, 289, 120035.	10.8	84
15	Ir/g-C <sub>3</sub> N <sub>4</sub> /Nitrogen-Doped Graphene Nanocomposites as Bifunctional Electrocatalysts for Overall Water Splitting in Acidic Electrolytes. <i>ACS Applied Materials &amp; Interfaces</i> , 2018, 10, 39161-39167.	4.0	80
16	Highly Efficient Oxygen Evolution by a Thermocatalytic Process Cascaded Electrocatalysis Over Sulfur-Treated Fe-Based Metal-Organic Frameworks. <i>Advanced Energy Materials</i> , 2020, 10, 2000184.	10.2	75
17	Carbon dots-Pt modified polyaniline nanosheet grown on carbon cloth as stable and high-efficient electrocatalyst for hydrogen evolution in pH-universal electrolyte. <i>Applied Catalysis B: Environmental</i> , 2019, 257, 117905.	10.8	74
18	Carbon Dots Derived from Citric Acid and Glutathione as a Highly Efficient Intracellular Reactive Oxygen Species Scavenger for Alleviating the Lipopolysaccharide-Induced Inflammation in Macrophages. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 41088-41095.	4.0	74

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19	Pt nanocrystals on nitrogen-doped graphene for the hydrogen evolution reaction using Si nanowires as a sacrificial template. <i>Nanoscale</i> , 2017, 9, 10138-10144.	2.8	73
20	All-solid-state Z-scheme system of NiO/CDs/BiVO <sub>4</sub> for visible light-driven efficient overall water splitting. <i>Chemical Engineering Journal</i> , 2019, 358, 134-142.	6.6	71
21	A 4e <sup>-</sup> 2e <sup>-</sup> cascaded pathway for highly efficient production of H <sub>2</sub> and H <sub>2</sub> O <sub>2</sub> from water photo-splitting at normal pressure. <i>Applied Catalysis B: Environmental</i> , 2020, 270, 118875.	10.8	68
22	Rhodium Nanoparticles/F-Doped Graphene Composites as Multifunctional Electrocatalyst Superior to Pt/C for Hydrogen Evolution and Formic Acid Oxidation Reaction. <i>ACS Applied Materials &amp; Interfaces</i> , 2018, 10, 33153-33161.	4.0	63
23	Carbon-Dot-Based White-Light-Emitting Diodes with Adjustable Correlated Color Temperature Guided by Machine Learning. <i>Angewandte Chemie - International Edition</i> , 2021, 60, 12585-12590.	7.2	60
24	Carbon Dots Enhance the Nitrogen Fixation Activity of <i>Azotobacter Chroococcum</i> . <i>ACS Applied Materials &amp; Interfaces</i> , 2018, 10, 16308-16314.	4.0	57
25	Selective inactivation of Gram-negative bacteria by carbon dots derived from natural biomass: <i>Artemisia argyi</i> leaves. <i>Journal of Materials Chemistry B</i> , 2020, 8, 2666-2672.	2.9	57
26	Ru-modified silicon nanowires as electrocatalysts for hydrogen evolution reaction. <i>Electrochemistry Communications</i> , 2015, 52, 29-33.	2.3	56
27	Maltase Decorated by Chiral Carbon Dots with Inhibited Enzyme Activity for Glucose Level Control. <i>Small</i> , 2019, 15, e1901512.	5.2	56
28	Ultra-Bright and Stable Pure Blue Light-Emitting Diode from O, N Co-Doped Carbon Dots. <i>Laser and Photonics Reviews</i> , 2021, 15, 2000412.	4.4	54
29	Charge storage of carbon dot enhances photo-production of H <sub>2</sub> and H <sub>2</sub> O <sub>2</sub> over Ni <sub>2</sub> P/carbon dot catalyst under normal pressure. <i>Chemical Engineering Journal</i> , 2021, 409, 128184.	6.6	54
30	Interface photo-charge kinetics regulation by carbon dots for efficient hydrogen peroxide production. <i>Journal of Materials Chemistry A</i> , 2021, 9, 515-522.	5.2	53
31	Pyrolic nitrogen dominated the carbon dot mimic oxidase activity. <i>Carbon</i> , 2021, 179, 692-700.	5.4	50
32	Silicon Nanowires with Permanent Electrostatic Charges for Nanogenerators. <i>Nano Letters</i> , 2011, 11, 4870-4873.	4.5	49
33	Chiral Control of Carbon Dots via Surface Modification for Tuning the Enzymatic Activity of Glucose Oxidase. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 5877-5886.	4.0	48
34	Pristine Carbon Dots Boost the Growth of <i>Chlorella vulgaris</i> by Enhancing Photosynthesis. <i>ACS Applied Bio Materials</i> , 2018, 1, 894-902.	2.3	45
35	Carbon dots regulate the interface electron transfer and catalytic kinetics of Pt-based alloys catalyst for highly efficient hydrogen oxidation. <i>Journal of Energy Chemistry</i> , 2022, 66, 61-67.	7.1	45
36	Robust carbon-dot-based evaporator with an enlarged evaporation area for efficient solar steam generation. <i>Journal of Materials Chemistry A</i> , 2020, 8, 14566-14573.	5.2	44

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37	Improved Energy Storage Performance Based on Gamma-Ray Irradiated Activated Carbon Cloth. <i>Electrochimica Acta</i> , 2016, 191, 908-915.	2.6	42
38	Synergistic Cu@CoO <sub>x</sub> core-cage structure on carbon layers as highly active and durable electrocatalysts for methanol oxidation. <i>Applied Catalysis B: Environmental</i> , 2019, 244, 795-801.	10.8	42
39	In-situ photovoltage transients assisted catalytic study on H <sub>2</sub> O <sub>2</sub> photoproduction over organic molecules modified carbon nitride photocatalyst. <i>Applied Catalysis B: Environmental</i> , 2021, 285, 119817.	10.8	42
40	A function-switchable metal-free photocatalyst for the efficient and selective production of hydrogen and hydrogen peroxide. <i>Journal of Materials Chemistry A</i> , 2020, 8, 11773-11780.	5.2	42
41	Polyaniline/Carbon Dots Composite as a Highly Efficient Metal-Free Dual-Functional Photoassisted Electrocatalyst for Overall Water Splitting. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 24814-24823.	4.0	41
42	In-situ transient photovoltage study on interface electron transfer regulation of carbon dots/NiCo <sub>2</sub> O <sub>4</sub> photocatalyst for the enhanced overall water splitting activity. <i>Nano Research</i> , 2022, 15, 1786-1795.	5.8	41
43	Os/Si nanocomposites as excellent hydrogen evolution electrocatalysts with thermodynamically more favorable hydrogen adsorption free energy than platinum. <i>Nano Energy</i> , 2017, 39, 284-290.	8.2	40
44	Strain engineering for Janus palladium-gold bimetallic nanoparticles: Enhanced electrocatalytic performance for oxygen reduction reaction and zinc-air battery. <i>Chemical Engineering Journal</i> , 2020, 389, 124240.	6.6	40
45	A stepwise-designed Rh-Au-Si nanocomposite that surpasses Pt/C hydrogen evolution activity at high overpotentials. <i>Nano Research</i> , 2017, 10, 1749-1755.	5.8	37
46	Carbon Dots Enable Efficient Delivery of Functional DNA in Plants. <i>ACS Applied Bio Materials</i> , 2020, 3, 8857-8864.	2.3	33
47	Optimizing the hydrogen evolution reaction by shrinking Pt amount in Pt-Ag/SiNW nanocomposites. <i>International Journal of Hydrogen Energy</i> , 2017, 42, 15024-15030.	3.8	31
48	Carbon dots modified Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> -based fibrous supercapacitor with photo-enhanced capacitance. <i>Nano Research</i> , 2021, 14, 3886-3892.	5.8	31
49	Determining Locations of Conduction Bands and Valence Bands of Semiconductor Nanoparticles Based on Their Band Gaps. <i>ACS Omega</i> , 2020, 5, 10297-10300.	1.6	30
50	One-dimensional CdS <sub>x</sub> Se <sub>1-x</sub> nanoribbons for high-performance rigid and flexible photodetectors. <i>Journal of Materials Chemistry C</i> , 2017, 5, 7521-7526.	2.7	29
51	PbS Quantum Dots/2D Nonlayered CdS <sub>x</sub> Se <sub>1-x</sub> Nanosheet Hybrid Nanostructure for High-Performance Broadband Photodetectors. <i>ACS Applied Materials &amp; Interfaces</i> , 2018, 10, 43887-43895.	4.0	29
52	Engineering CoN/Ni(OH) <sub>2</sub> heterostructures with improved intrinsic interfacial charge transfer toward simultaneous hydrogen generation and urea-rich wastewater purification. <i>Journal of Power Sources</i> , 2020, 480, 229151.	4.0	29
53	Highly efficient water splitting over a RuO <sub>2</sub> /F-doped graphene electrocatalyst with ultra-low ruthenium content. <i>Inorganic Chemistry Frontiers</i> , 2020, 7, 2188-2194.	3.0	29
54	Rh-Ag-Si ternary composites: highly active hydrogen evolution electrocatalysts over Pt-Ag-Si. <i>Journal of Materials Chemistry A</i> , 2017, 5, 1623-1628.	5.2	28

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55	Biotoxicity of degradable carbon dots towards microalgae <i>Chlorella vulgaris</i> . <i>Environmental Science: Nano</i> , 2019, 6, 3316-3323.	2.2	28
56	Effective PtAu nanowire network catalysts with ultralow Pt content for formic acid oxidation and methanol oxidation. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 16071-16079.	3.8	27
57	Highly efficient metal-free catalyst from cellulose for hydrogen peroxide photoproduction instructed by machine learning and transient photovoltage technology. <i>Nano Research</i> , 2022, 15, 4000-4007.	5.8	26
58	Visible-light-enhanced gas sensing of CdS <sub>x</sub> Se <sub>1-x</sub> nanoribbons for acetic acid at room temperature. <i>Sensors and Actuators B: Chemical</i> , 2015, 215, 497-503.	4.0	25
59	Palladium-silicon nanocomposites as a stable electrocatalyst for hydrogen evolution reaction. <i>Journal of Colloid and Interface Science</i> , 2018, 522, 242-248.	5.0	25
60	Carbon dot-modified mesoporous carbon as a supercapacitor with enhanced light-assisted capacitance. <i>Nanoscale</i> , 2020, 12, 17925-17930.	2.8	25
61	Tree-inspired ultra-rapid steam generation and simultaneous energy harvesting under weak illumination. <i>Journal of Materials Chemistry A</i> , 2020, 8, 10260-10268.	5.2	25
62	Carbon dots/PtW <sub>6</sub> O <sub>24</sub> composite as efficient and stable electrocatalyst for hydrogen oxidation reaction in PEMFCs. <i>Chemical Engineering Journal</i> , 2021, 426, 130709.	6.6	25
63	Rh/RhO <sub>x</sub> nanosheets as pH-universal bifunctional catalysts for hydrazine oxidation and hydrogen evolution reactions. <i>Journal of Materials Chemistry A</i> , 2022, 10, 1891-1898.	5.2	25
64	Rhodium/silicon quantum dot/carbon quantum dot composites as highly efficient electrocatalysts for hydrogen evolution reaction with Pt-like performance. <i>Electrochimica Acta</i> , 2019, 299, 828-834.	2.6	24
65	Quasi-layer Co <sub>2</sub> P-polarized Cu <sub>3</sub> P nanocomposites with enhanced intrinsic interfacial charge transfer for efficient overall water splitting. <i>Nanoscale</i> , 2019, 11, 6394-6400.	2.8	23
66	Carbon dots/Bi <sub>2</sub> WO <sub>6</sub> composite with compensatory photo-electronic effect for overall water photo-splitting at normal pressure. <i>Chinese Chemical Letters</i> , 2021, 32, 2283-2286.	4.8	23
67	Mesocrystal PtRu supported on reduced graphene oxide as catalysts for methanol oxidation reaction. <i>Journal of Colloid and Interface Science</i> , 2019, 557, 729-736.	5.0	22
68	Simple Semiempirical Method for the Location Determination of HOMO and LUMO of Carbon Dots. <i>Journal of Physical Chemistry C</i> , 2021, 125, 7451-7457.	1.5	22
69	Metal-Free Catalyst with Large Carbon Defects for Efficient Direct Overall Water Splitting in Air at Room Pressure. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 30280-30288.	4.0	21
70	Powerful synergy: efficient Pt-Au-Si nanocomposites as state-of-the-art catalysts for electrochemical hydrogen evolution. <i>Journal of Materials Chemistry A</i> , 2017, 5, 21903-21908.	5.2	19
71	Quantitative evaluation of synergistic effects for Pt nanoparticles embedded in N-enriched carbon matrix as an efficient and durable catalyst for the hydrogen evolution reaction and their PEMWE performance. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 31121-31128.	3.8	19
72	The self-activation and synergy of amorphous Re nanoparticle-Si nanowire composites for the electrocatalytic hydrogen evolution. <i>Electrochimica Acta</i> , 2017, 228, 268-273.	2.6	18

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73	Rod-shaped $\gamma$ -MnO <sub>2</sub> electrocatalysts with high Mn <sup>3+</sup> content for oxygen reduction reaction and Zn-air battery. <i>Journal of Alloys and Compounds</i> , 2021, 860, 158427.	2.8	17
74	Silicon monoxide assisted synthesis of Ru modified carbon nanocomposites as high mass activity electrocatalysts for hydrogen evolution. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 11817-11823.	3.8	16
75	Functionalization of metal oxides with thiocyanate groups: A general strategy for boosting oxygen evolution reaction in neutral media. <i>Nano Energy</i> , 2020, 76, 105079.	8.2	16
76	Effective Low-Temperature Methanol Aqueous Phase Reforming with Metal-Free Carbon Dots/C <sub>3</sub> N <sub>4</sub> Composites. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 24702-24709.	4.0	16
77	Electric field polarized sulfonated carbon dots/NiFe layered double hydroxide as highly efficient electrocatalyst for oxygen evolution reaction. <i>Chemical Engineering Journal</i> , 2021, 420, 129690.	6.6	16
78	Silicon nanowires decorated with gold nanoparticles <i>via in situ</i> reduction for photoacoustic imaging-guided photothermal cancer therapy. <i>Journal of Materials Chemistry B</i> , 2019, 7, 4393-4401.	2.9	15
79	Ir@Au Bimetallic Nanoparticle Modified Silicon Nanowires with Ultralow Content of Ir for Hydrogen Evolution Reaction. <i>ChemCatChem</i> , 2019, 11, 2126-2130.	1.8	15
80	Pd Nanoparticles with Twin Structures on F-doped Graphene for Formic Acid Oxidation. <i>ChemCatChem</i> , 2020, 12, 504-509.	1.8	15
81	Two-Dimensional Confined Synthesis of Metastable 1T-Phase MoS <sub>2</sub> Nanosheets for the Hydrogen Evolution Reaction. <i>ACS Applied Nano Materials</i> , 2022, 5, 1377-1384.	2.4	15
82	Diluted silicon promoting Pd/Pt catalysts for oxygen reduction reaction with strong anti-poisoning effect. <i>Applied Catalysis B: Environmental</i> , 2022, 315, 121549.	10.8	15
83	Unusual Effect of Trace Water on the Structure and Activity of Ni <sub>x</sub> Co <sub>1-x</sub> Electro-catalysts for the Methanol Oxidation Reaction. <i>ChemSusChem</i> , 2020, 13, 964-973.	3.6	14
84	Rhodium/graphitic-carbon-nitride composite electrocatalyst facilitates efficient hydrogen evolution in acidic and alkaline electrolytes. <i>Journal of Colloid and Interface Science</i> , 2020, 571, 30-37.	5.0	14
85	Palladium-Copper Bimetallic Nanoparticles Loaded on Carbon Black for Oxygen Reduction and Zinc-Air Batteries. <i>ACS Applied Nano Materials</i> , 2021, 4, 1478-1484.	2.4	12
86	A carbon dot-based total green and self-recoverable solid-state electrochemical cell fully utilizing O <sub>2</sub> /H <sub>2</sub> O redox couple. <i>SusMat</i> , 2021, 1, 448-457.	7.8	12
87	Nanosponge Pt Modified Graphene Nanocomposites Using Silicon Monoxides as a Reducing Agent: High Efficient Electrocatalysts for Hydrogen Evolution. <i>ACS Sustainable Chemistry and Engineering</i> , 2018, 6, 15238-15244.	3.2	11
88	Photoluminescence of pure silicon quantum dots embedded in an amorphous silica wire array. <i>Journal of Materials Chemistry C</i> , 2017, 5, 6713-6717.	2.7	10
89	All-in-one photocatalysis device for one-step high concentration H <sub>2</sub> O <sub>2</sub> photoproduction. <i>Chemical Engineering Journal</i> , 2022, 427, 131972.	6.6	10
90	Prominent electrocatalytic methanol oxidation from cauliflower shape gold with high-index facets. <i>Materials Chemistry and Physics</i> , 2017, 186, 301-304.	2.0	9

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91	Sensitive detection of clenbuterol by hybrid iridium/silicon nanowire-enhanced laser desorption/ionization mass spectrometry. <i>Journal of Materials Chemistry B</i> , 2020, 8, 7792-7800.	2.9	8
92	Carbon-Dot-Based White-Light-Emitting Diodes with Adjustable Correlated Color Temperature Guided by Machine Learning. <i>Angewandte Chemie</i> , 2021, 133, 12693-12698.	1.6	8
93	Carbon dots bridge NiO and Mn <sub>2</sub> O <sub>3</sub> as highly efficient bifunctional oxygen electrocatalysts for rechargeable zinc-air batteries. <i>Applied Surface Science</i> , 2022, 596, 153642.	3.1	8
94	ZIF/Co-C <sub>3</sub> N <sub>4</sub> with enhanced electrocatalytic reduction of carbon dioxide activity by the photoactivation process. <i>Nanoscale</i> , 2021, 13, 14089-14095.	2.8	7
95	Pd Nanoparticles/F, N Codoping Graphene Composites for Oxygen Reduction and Zinc-Air Batteries. <i>ACS Sustainable Chemistry and Engineering</i> , 0, , .	3.2	6
96	Sulfhydryl-functionalized carbon dots modified ball cactus-like Au composites facilitating the electrocatalytic ethanol oxidation through adsorption effect. <i>Journal of Applied Electrochemistry</i> , 2020, 50, 925-933.	1.5	6
97	Carbon Dots Promote the Performance of Anodized Nickel Passivation Film on Ethanol Oxidation by Enhancing Oxidation of the Intermediate $\alpha$ . <i>Chinese Journal of Chemistry</i> , 2021, 39, 1199-1204.	2.6	5
98	Surface fluorinated nickel-graphene nanocomposites for high-efficiency methanol electrooxidation. <i>International Journal of Hydrogen Energy</i> , 2021, 46, 27138-27148.	3.8	5
99	Boosting electrocatalytic selectivity in carbon dioxide reduction: The fundamental role of dispersing gold nanoparticles on silicon nanowires. <i>Chinese Chemical Letters</i> , 2022, 33, 4380-4384.	4.8	5
100	Highly crystalline core dominated the catalytic performance of carbon dot for cyclohexane to adipic acid reaction. <i>Nano Research</i> , 2022, 15, 7662-7669.	5.8	5
101	One-Step Direct Fixation of Atmospheric CO <sub>2</sub> by Si-H Surface in Solution. <i>IScience</i> , 2020, 23, 100806.	1.9	3
102	Interfacial engineered PdRu/C with robust poison tolerance for oxygen reduction reaction and zinc-air battery. <i>Journal of Alloys and Compounds</i> , 2022, 896, 163112.	2.8	3
103	Ternary Os-Ag-Si electrocatalysts for hydrogen evolution are more efficient than Os-Au-Si. <i>Journal of Colloid and Interface Science</i> , 2019, 539, 257-262.	5.0	2