

# Dewei Rao

## List of Publications by Year in descending order

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91  
papers

4,207  
citations

101384

36  
h-index

123241

61  
g-index

92  
all docs

92  
docs citations

92  
times ranked

5180  
citing authors

#	ARTICLE	IF	CITATIONS
1	Lattice oxygen activation enabled by high-valence metal sites for enhanced water oxidation. <i>Nature Communications</i> , 2020, 11, 4066.	5.8	337
2	CNT-assembled dodecahedra core@nickel hydroxide nanosheet shell enabled sulfur cathode for high-performance lithium-sulfur batteries. <i>Nano Energy</i> , 2019, 55, 82-92.	8.2	185
3	Efficient band structure tuning, charge separation, and visible-light response in ZrS <sub>2</sub> -based van der Waals heterostructures. <i>Energy and Environmental Science</i> , 2016, 9, 841-849.	15.6	161
4	Lattice Strain Engineering of Homogeneous NiS <sub>0.5</sub> Se <sub>0.5</sub> Core-Shell Nanostructure as a Highly Efficient and Robust Electrocatalyst for Overall Water Splitting. <i>Advanced Materials</i> , 2020, 32, e2000231.	11.1	158
5	Ultrahigh energy storage and ultrafast ion diffusion in borophene-based anodes for rechargeable metal ion batteries. <i>Journal of Materials Chemistry A</i> , 2017, 5, 2328-2338.	5.2	134
6	N <sub>2</sub> Electroreduction to NH <sub>3</sub> by Selenium Vacancy-Rich ReSe <sub>2</sub> Catalysis at an Abrupt Interface. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 13320-13327.	7.2	127
7	Ketjen Black-MnO Composite Coated Separator For High Performance Rechargeable Lithium-Sulfur Battery. <i>Electrochimica Acta</i> , 2016, 192, 346-356.	2.6	122
8	Mechanism on the Improved Performance of Lithium Sulfur Batteries with MXene-Based Additives. <i>Journal of Physical Chemistry C</i> , 2017, 121, 11047-11054.	1.5	118
9	Simultaneous Manipulation of O Doping and Metal Vacancy in Atomically Thin Zn <sub>10</sub> In <sub>16</sub> S <sub>34</sub> Nanosheet Arrays toward Improved Photoelectrochemical Performance. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 16882-16887.	7.2	109
10	Amorphization-induced surface electronic states modulation of cobaltous oxide nanosheets for lithium-sulfur batteries. <i>Nature Communications</i> , 2021, 12, 3102.	5.8	103
11	Rational Design and Strain Engineering of Nanoporous Boron Nitride Nanosheet Membranes for Water Desalination. <i>Journal of Physical Chemistry C</i> , 2017, 121, 22105-22113.	1.5	102
12	Atomic Vacancies Control of Pd-Based Catalysts for Enhanced Electrochemical Performance. <i>Advanced Materials</i> , 2018, 30, 1704171.	11.1	102
13	Boron-substituted graphyne as a versatile material with high storage capacities of Li and H <sub>2</sub> : a multiscale theoretical study. <i>Physical Chemistry Chemical Physics</i> , 2013, 15, 16120.	1.3	96
14	Mechanism of polysulfide immobilization on defective graphene sheets with N-substitution. <i>Carbon</i> , 2016, 110, 207-214.	5.4	92
15	Engineering the Surface Metal Active Sites of Nickel Cobalt Oxide Nanoplates toward Enhanced Oxygen Electrocatalysis for Zn-Air Battery. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 4915-4921.	4.0	84
16	Prominently Improved Hydrogen Purification and Dispersive Metal Binding for Hydrogen Storage by Substitutional Doping in Porous Graphene. <i>Journal of Physical Chemistry C</i> , 2012, 116, 21291-21296.	1.5	76
17	Hexagonal Boron Nitride with Designed Nanopores as a High-Efficiency Membrane for Separating Gaseous Hydrogen from Methane. <i>Journal of Physical Chemistry C</i> , 2015, 119, 19826-19831.	1.5	71
18	Enhanced light harvesting and electron-hole separation for efficient photocatalytic hydrogen evolution over Cu <sub>7</sub> S <sub>4</sub> -enwrapped Cu <sub>2</sub> O nanocubes. <i>Applied Catalysis B: Environmental</i> , 2019, 246, 202-210.	10.8	71

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19	Graphdiyne as a High-Efficiency Membrane for Separating Oxygen from Harmful Gases: A First-Principles Study. ACS Applied Materials & Interfaces, 2016, 8, 28166-28170.	4.0	68
20	Valence Engineering <i>via</i> Dual-Cation and Boron Doping in Pyrite Selenide for Highly Efficient Oxygen Evolution. ACS Nano, 2019, 13, 11469-11476.	7.3	68
21	Synergistic Interface-Assisted Electrode-Electrolyte Coupling Toward Advanced Charge Storage. Advanced Materials, 2020, 32, e2005344.	11.1	64
22	Prototypical Study of Double-Layered Cathodes for Aqueous Rechargeable Static Zn <sup>2+</sup> Batteries. Nano Letters, 2021, 21, 4129-4135.	4.5	62
23	Lithium-doped MOF impregnated with lithium-coated fullerenes: A hydrogen storage route for high gravimetric and volumetric uptakes at ambient temperatures. Chemical Communications, 2011, 47, 7698.	2.2	60
24	Hierarchical iridium-based multimetallic alloy with double-core-shell architecture for efficient overall water splitting. Science China Materials, 2020, 63, 249-257.	3.5	59
25	Separator modified by Ketjen black for enhanced electrochemical performance of lithium-sulfur batteries. RSC Advances, 2016, 6, 13680-13685.	1.7	54
26	Three-Phase Boundary in Cross-Coupled Micro-Mesoporous Networks Enabling 3D-Printed and Ionogel-Based Quasi-Solid-State Micro-Supercapacitors. Advanced Materials, 2020, 32, e2002474.	11.1	54
27	High-Polarity Fluoroalkyl Ether Electrolyte Enables Solvation-Free Li <sup>+</sup> Transfer for High-Rate Lithium Metal Batteries. Advanced Science, 2022, 9, e2104699.	5.6	54
28	Mg <sub>0.6</sub> Ni <sub>0.4</sub> O hollow nanofibers prepared by electrospinning as additive for improving electrochemical performance of lithium-sulfur batteries. Journal of Alloys and Compounds, 2015, 650, 351-356.	2.8	52
29	A promising monolayer membrane for oxygen separation from harmful gases: nitrogen-substituted polyphenylene. Nanoscale, 2014, 6, 9960-9964.	2.8	51
30	Free-standing graphene oxide membrane with tunable channels for efficient water pollution control. Journal of Hazardous Materials, 2019, 366, 659-668.	6.5	45
31	Strong coupled spinel oxide with N-rGO for high-efficiency ORR/OER bifunctional electrocatalyst of Zn-air batteries. Journal of Energy Chemistry, 2021, 57, 428-435.	7.1	45
32	Improved Transport Properties and Novel Li Diffusion Dynamics in van der Waals C <sub>2</sub> N/Graphene Heterostructure as Anode Materials for Lithium-Ion Batteries: A First-Principles Investigation. Journal of Physical Chemistry C, 2019, 123, 3353-3367.	1.5	43
33	Tuning the Metal Electronic Structure of Anchored Cobalt Phthalocyanine via Dual-Regulator for Efficient CO <sub>2</sub> Electroreduction and Zn-CO <sub>2</sub> Batteries. Advanced Functional Materials, 2022, 32, .	7.8	43
34	Hollow spherical Lanthanum oxide coated separator for high electrochemical performance lithium-sulfur batteries. Materials Research Bulletin, 2017, 94, 104-112.	2.7	38
35	Catenated metal-organic frameworks: Promising hydrogen purification materials and high hydrogen storage medium with further lithium doping. International Journal of Hydrogen Energy, 2013, 38, 9811-9818.	3.8	37
36	Theoretical study of H <sub>2</sub> adsorption on metal-doped graphene sheets with nitrogen-substituted defects. International Journal of Hydrogen Energy, 2015, 40, 14154-14162.	3.8	37

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37	Zn-MOF derived micro/meso porous carbon nanorod for high performance lithium-sulfur battery. RSC Advances, 2016, 6, 94629-94635.	1.7	35
38	Charge redistribution of Co on cobalt (II) oxide surface for enhanced oxygen evolution electrocatalysis. Nano Energy, 2019, 61, 267-274.	8.2	35
39	Bilayer graphene with ripples for reverse osmosis desalination. Carbon, 2018, 136, 21-27.	5.4	34
40	Electronic properties and hydrogen storage application of designed porous nanotubes from a polyphenylene network. International Journal of Hydrogen Energy, 2014, 39, 18966-18975.	3.8	33
41	Squeezed metallic droplet with tunable Kubo gap and charge injection in transition metal dichalcogenides. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 6362-6369.	3.3	33
42	Spatially Confined Formation of Single Atoms in Highly Porous Carbon Nitride Nanoreactors. ACS Nano, 2021, 15, 7790-7798.	7.3	33
43	Dual-Metal Sites Boosting Polarization of Nitrogen Molecules for Efficient Nitrogen Photofixation. Advanced Science, 2021, 8, 2100302.	5.6	32
44	High rate lithium-sulfur batteries enabled by mesoporous TiO <sub>2</sub> nanotubes prepared by electrospinning. Materials Research Bulletin, 2017, 95, 402-408.	2.7	30
45	Interfacial competition between a borophene-based cathode and electrolyte for the multiple-sulfide immobilization of a lithium sulfur battery. Journal of Materials Chemistry A, 2019, 7, 7092-7098.	5.2	30
46	Nickel fibers/sulfur composites cathode with enhanced electrochemical performance for rechargeable lithium-sulfur batteries. Electrochimica Acta, 2015, 176, 442-447.	2.6	28
47	N-substituted defective graphene sheets: promising electrode materials for Na-ion batteries. RSC Advances, 2015, 5, 17042-17048.	1.7	27
48	CeO <sub>2</sub> nanodots decorated ketjen black for high performance lithium-sulfur batteries. RSC Advances, 2016, 6, 111190-111196.	1.7	27
49	Reversing the Nucleophilicity of Active Sites in CoP <sub>2</sub> Enables Exceptional Hydrogen Evolution Catalysis. Small, 2022, 18, e2106870.	5.2	27
50	Nanoporous MoS <sub>2</sub> monolayer as a promising membrane for purifying hydrogen and enriching methane. Journal of Physics Condensed Matter, 2017, 29, 375201.	0.7	26
51	Dual transition-metal atoms doping: an effective route to promote the ORR and OER activity on MoTe <sub>2</sub> . New Journal of Chemistry, 2021, 45, 5589-5595.	1.4	26
52	Separator modified by Y <sub>2</sub> O <sub>3</sub> nanoparticles-Ketjen Black hybrid and its application in lithium-sulfur battery. Journal of Solid State Electrochemistry, 2017, 21, 3229-3236.	1.2	25
53	Ca-Embedded C <sub>2</sub> N: an efficient adsorbent for CO <sub>2</sub> capture. Physical Chemistry Chemical Physics, 2017, 19, 28323-28329.	1.3	25
54	Gradient phosphorus-doping engineering and superficial amorphous reconstruction in NiFe <sub>2</sub> O <sub>4</sub> nanoarrays to enhance the oxygen evolution electrocatalysis. Nanoscale, 2020, 12, 10977-10986.	2.8	24

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55	Highly Active and CO-Tolerant Trimetallic NiPtPd Hollow Nanocrystals as Electrocatalysts for Methanol Electro-oxidation Reaction. ACS Applied Energy Materials, 2019, 2, 4763-4773.	2.5	23
56	Separator modified with Ketjenblack-In <sub>2</sub> O <sub>3</sub> nanoparticles for long cycle-life lithium-sulfur batteries. Journal of Solid State Electrochemistry, 2019, 23, 645-656.	1.2	22
57	Insight into tuning the surface and bulk microstructure of perovskite catalyst through control of cation non-stoichiometry. Journal of Catalysis, 2020, 381, 408-414.	3.1	22
58	Orbital-regulated interfacial electronic coupling endows Ni <sub>3</sub> N with superior catalytic surface for hydrogen evolution reaction. Science China Chemistry, 2020, 63, 1563-1569.	4.2	22
59	Tuning the Interaction between Ruthenium Single Atoms and the Second Coordination Sphere for Efficient Nitrogen Photofixation. Advanced Functional Materials, 2022, 32, .	7.8	22
60	Lithium decoration of three dimensional boron-doped graphene frameworks for high-capacity hydrogen storage. Applied Physics Letters, 2015, 106, .	1.5	21
61	Mesoporous TiO <sub>2</sub> nanosheet with a large amount of exposed {001} facets as sulfur host for high-performance lithium-sulfur batteries. Journal of Solid State Electrochemistry, 2016, 20, 2161-2168.	1.2	21
62	Non-metallic electronic regulation in CuCo oxy-/thio-spinel as advanced oxygen evolution electrocatalysts. Science China Chemistry, 2021, 64, 101-108.	4.2	21
63	Tunable band gap and hydrogen adsorption property of a two-dimensional porous polymer by nitrogen substitution. Physical Chemistry Chemical Physics, 2013, 15, 666-670.	1.3	20
64	Support Amorphization Engineering Regulates Single-Atom Ru as an Electron Pump for Nitrogen Photofixation. ACS Catalysis, 2022, 12, 8139-8146.	5.5	20
65	Simultaneous Manipulation of O <sup>2-</sup> Doping and Metal Vacancy in Atomically Thin Zn <sub>10</sub> In <sub>16</sub> S <sub>34</sub> Nanosheet Arrays toward Improved Photoelectrochemical Performance. Angewandte Chemie, 2018, 130, 17124-17129.	1.6	19
66	Immobilisation of sulphur on cathodes of lithium-sulfur batteries via B-doped atomic-layer carbon materials. Physical Chemistry Chemical Physics, 2019, 21, 10895-10901.	1.3	19
67	N <sub>2</sub> Electroreduction to NH <sub>3</sub> by Selenium Vacancy-Rich ReSe <sub>2</sub> Catalysis at an Abrupt Interface. Angewandte Chemie, 2020, 132, 13422-13429.	1.6	18
68	Behavior of gold-enhanced electrocatalytic performance of NiPtAu hollow nanocrystals for alkaline methanol oxidation. Science China Materials, 2021, 64, 611-620.	3.5	18
69	A separator modified by spray-dried hollow spherical cerium oxide and its application in lithium sulfur batteries. RSC Advances, 2016, 6, 114989-114996.	1.7	16
70	Accelerating water dissociation kinetics of Ni <sub>3</sub> N by tuning interfacial orbital coupling. Nano Research, 2021, 14, 3458-3465.	5.8	16
71	Combining the Advantages of Hollow and One-Dimensional Structures: Balanced Activity and Stability toward Methanol Oxidation Based on the Interface of PtCo Nanochains. ACS Applied Energy Materials, 2019, 2, 1588-1593.	2.5	15
72	Fabrication and Characterization of Non-Woven Carbon Nanofibers as Functional Interlayers for Rechargeable Lithium Sulfur Battery. Journal of Nanoscience and Nanotechnology, 2017, 17, 1857-1862.	0.9	14

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73	Tailoring the d-Band Center of Double-Perovskite LaCo <sub>x</sub> Ni <sub>1-x</sub> O <sub>3</sub> Nanorods for High Activity in Artificial N <sub>2</sub> Fixation. ACS Applied Materials & Interfaces, 2021, 13, 13347-13353.	4.0	14
74	Synergistic interaction of Nb atoms anchored on g-C <sub>3</sub> N <sub>4</sub> and H <sup>+</sup> promoting high-efficiency nitrogen reduction reaction. Chinese Journal of Catalysis, 2022, 43, 1139-1147.	6.9	14
75	First-principles study on electronic and optical properties of Cu <sub>2</sub> ZnSiV <sub>4</sub> (VI=S, Se, and Te) quaternary semiconductors. AIP Advances, 2015, 5, .	0.6	13
76	Influences of lithium doping and fullerene impregnation on hydrogen storage in metal organic frameworks. Molecular Simulation, 2013, 39, 968-974.	0.9	12
77	Regulating the electronic properties of MoSe <sub>2</sub> to improve its CO <sub>2</sub> electrocatalytic reduction performance via atomic doping. New Journal of Chemistry, 2021, 45, 5350-5356.	1.4	12
78	Short-range order in amorphous nickel oxide nanosheets enables selective and efficient electrochemical hydrogen peroxide production. Cell Reports Physical Science, 2022, 3, 100788.	2.8	12
79	Improving FeO <sub>x</sub> Oxygen Evolution Electrocatalysts through Hydroxyl-Modulated Local Coordination Environment. ACS Catalysis, 2022, 12, 7443-7452.	5.5	12
80	Synthesis of Tellurium Fusiform Nanoarchitectures by Controlled Living Nanowire Modification. Journal of Physical Chemistry C, 2016, 120, 12305-12312.	1.5	9
81	Surface Atomic Configurations of MnO <sub>2</sub> Regulating the Immobilization of Sulfides in Lithium Sulfur Battery. Journal of Physical Chemistry C, 2020, 124, 5565-5573.	1.5	9
82	Electronic structures and transport properties of SnSe nanoribbon lateral heterostructures. Physical Chemistry Chemical Physics, 2019, 21, 9296-9301.	1.3	8
83	Spinel copper-iron-oxide magnetic nanoparticles with cooperative Cu(II) and Cu(I) sites for enhancing the catalytic transformation of 1,2-propanediol to lactic acid under anaerobic conditions. Catalysis Science and Technology, 2020, 10, 8094-8107.	2.1	8
84	In situ coating amorphous boride on ternary pyrite-type boron sulfide for highly efficient oxygen evolution. Journal of Materials Chemistry A, 2021, 9, 12283-12290.	5.2	8
85	Self-Organization of Amorphous Carbon Nanocapsules into Diamond Nanocrystals Driven by Self-Nanoscopic Excessive Pressure under Moderate Electron Irradiation without External Heating. Small, 2018, 14, 1702072.	5.2	5
86	Self-reconstruction mediates isolated Pt tailored nanoframes for highly efficient catalysis. Journal of Materials Chemistry A, 2021, 9, 22501-22508.	5.2	5
87	Modulating depth of 1,2-propanediol oxidation over La(III) doped MCM-41 supported binary Pd and Bi nanoparticles for selective production of C <sub>3</sub> carbonyl compounds. Applied Surface Science, 2021, 554, 149528.	3.1	2
88	CO <sub>2</sub> electrochemical reduction boosted by the regulated electronic properties of metalloporphyrins through tuning an atomic environment. New Journal of Chemistry, 2021, 45, 10664-10671.	1.4	2
89	Aqueous Solution Synthesis of Sulfur-Ketjen Black Cathode Materials Without Heat Treatment for High-Performance Li-S Batteries. Science of Advanced Materials, 2016, 8, 1417-1425.	0.1	1
90	Enhancement of Carbon Dioxide Adsorption by Lithium Decorating and Fullerene Encapsulating in Metal-Organic Frameworks. Advanced Materials Research, 0, 773, 927-931.	0.3	0

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91	Tuning the Interaction between Ruthenium Single Atoms and the Second Coordination Sphere for Efficient Nitrogen Photofixation (Adv. Funct. Mater. 12/2022). Advanced Functional Materials, 2022, 32, .	7.8	0