Dewei Rao

List of Publications by Year in Descending Order

88 papers	2,545 citations	28 h-index	47 g-index
92 ext. papers	3,346 ext. citations	8.9 avg, IF	5.33 L-index

#	Paper	IF	Citations
88	Reversing the Nucleophilicity of Active Sites in CoP Enables Exceptional Hydrogen Evolution Catalysis.. *Small*, **2022**, e2106870	11	5
87	Short-range order in amorphous nickel oxide nanosheets enables selective and efficient electrochemical hydrogen peroxide production. *Cell Reports Physical Science*, **2022**, 3, 100788	6.1	1
86	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, 2270074	15.6	
85	Synergistic interaction of Nb atoms anchored on g-C3N4 and H+ promoting high-efficiency nitrogen reduction reaction. *Chinese Journal of Catalysis*, **2022**, 43, 1139-1147	11.3	1
84	Tailoring the d-Band Center of Double-Perovskite LaCoNiO Nanorods for High Activity in Artificial N Fixation. *ACS Applied Materials & Interfaces*, **2021**, 13, 13347-13353	9.5	4
83	Spatially Confined Formation of Single Atoms in Highly Porous Carbon Nitride Nanoreactors. *ACS Nano*, **2021**, 15, 7790-7798	16.7	9
82	Amorphization-induced surface electronic states modulation of cobaltous oxide nanosheets for lithium-sulfur batteries. *Nature Communications*, **2021**, 12, 3102	17.4	24
81	Prototypical Study of Double-Layered Cathodes for Aqueous Rechargeable Static Zn-I Batteries. *Nano Letters*, **2021**, 21, 4129-4135	11.5	8
80	Dual-Metal Sites Boosting Polarization of Nitrogen Molecules for Efficient Nitrogen Photofixation. *Advanced Science*, **2021**, 8, 2100302	13.6	11
79	Accelerating water dissociation kinetics of Ni3N by tuning interfacial orbital coupling. *Nano Research*, **2021**, 14, 3458-3465	10	6
78	Modulating depth of 1,2-propanediol oxidation over La(III) doped MCM-41 supported binary Pd and Bi nanoparticles for selective production of C3 carbonyl compounds. *Applied Surface Science*, **2021**, 554, 149528	6.7	0
77	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	12	16
76	Non-metallic electronic regulation in CuCo oxy-/thio-spinel as advanced oxygen evolution electrocatalysts. *Science China Chemistry*, **2021**, 64, 101-108	7.9	11
75	Behavior of gold-enhanced electrocatalytic performance of NiPtAu hollow nanocrystals for alkaline methanol oxidation. *Science China Materials*, **2021**, 64, 611-620	7.1	7
74	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	13	1
73	Dual transition-metal atoms doping: an effective route to promote the ORR and OER activity on MoTe2. *New Journal of Chemistry*, **2021**, 45, 5589-5595	3.6	3
72	CO2 electrochemical reduction boosted by the regulated electronic properties of metalloporphyrins through tuning an atomic environment. *New Journal of Chemistry*, **2021**, 45, 10664-10671	3.6	0

71	Regulating the electronic properties of MoSe2 to improve its CO2 electrocatalytic reduction performance via atomic doping. *New Journal of Chemistry*, **2021**, 45, 5350-5356	3.6	4
70	High-Polarity Fluoroalkyl Ether Electrolyte Enables Solvation-Free Li Transfer for High-Rate Lithium Metal Batteries.. *Advanced Science*, **2021**, e2104699	13.6	7
69	N Electroreduction to NH by Selenium Vacancy-Rich ReSe Catalysis at an Abrupt Interface. *Angewandte Chemie - International Edition*, **2020**, 59, 13320-13327	16.4	53
68	N2 Electroreduction to NH3 by Selenium Vacancy-Rich ReSe2 Catalysis at an Abrupt Interface. *Angewandte Chemie*, **2020**, 132, 13422-13429	3.6	10
67	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	11.5	7
66	Surface Atomic Configurations of MnO2 Regulating the Immobilization of Sulfides in Lithium Sulfur Battery. *Journal of Physical Chemistry C*, **2020**, 124, 5565-5573	3.8	6
65	Gradient phosphorus-doping engineering and superficial amorphous reconstruction in NiFeO nanoarrays to enhance the oxygen evolution electrocatalysis. *Nanoscale*, **2020**, 12, 10977-10986	7.7	11
64	Insight into tuning the surface and bulk microstructure of perovskite catalyst through control of cation non-stoichiometry. *Journal of Catalysis*, **2020**, 381, 408-414	7.3	6
63	Orbital-regulated interfacial electronic coupling endows Ni3N with superior catalytic surface for hydrogen evolution reaction. *Science China Chemistry*, **2020**, 63, 1563-1569	7.9	10
62	Spinel copper-iron-oxide magnetic nanoparticles with cooperative Cu(I) and Cu(II) sites for enhancing the catalytic transformation of 1,2-propanediol to lactic acid under anaerobic conditions. *Catalysis Science and Technology*, **2020**, 10, 8094-8107	5.5	4
61	Lattice oxygen activation enabled by high-valence metal sites for enhanced water oxidation. *Nature Communications*, **2020**, 11, 4066	17.4	105
60	Lattice-Strain Engineering of Homogeneous NiS Se Core-Shell Nanostructure as a Highly Efficient and Robust Electrocatalyst for Overall Water Splitting. *Advanced Materials*, **2020**, 32, e2000231	24	79
59	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	24	27
58	Synergistic Interface-Assisted Electrode-Electrolyte Coupling Toward Advanced Charge Storage. *Advanced Materials*, **2020**, 32, e2005344	24	31
57	Hierarchical iridium-based multimetallic alloy with double-core-shell architecture for efficient overall water splitting. *Science China Materials*, **2020**, 63, 249-257	7.1	39
56	Valence Engineering Dual-Cation and Boron Doping in Pyrite Selenide for Highly Efficient Oxygen Evolution. *ACS Nano*, **2019**, 13, 11469-11476	16.7	37
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	6.1	18
54	Charge redistribution of Co on cobalt (II) oxide surface for enhanced oxygen evolution electrocatalysis. *Nano Energy*, **2019**, 61, 267-274	17.1	18

53	Electronic structures and transport properties of SnS-SnSe nanoribbon lateral heterostructures. *Physical Chemistry Chemical Physics*, **2019**, 21, 9296-9301	3.6	4
52	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	6.1	11
51	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	13	25
50	Immobilisation of sulphur on cathodes of lithium-sulphur batteries via B-doped atomic-layer carbon materials. *Physical Chemistry Chemical Physics*, **2019**, 21, 10895-10901	3.6	10
49	Free-standing graphene oxide membrane with tunable channels for efficient water pollution control. *Journal of Hazardous Materials*, **2019**, 366, 659-668	12.8	31
48	Engineering the Surface Metal Active Sites of Nickel Cobalt Oxide Nanoplates toward Enhanced Oxygen Electrocatalysis for Zn-Air Battery. *ACS Applied Materials & Interfaces*, **2019**, 11, 4915-4921	9.5	56
47	Separator modified with Ketjenblack-In2O3 nanoparticles for long cycle-life lithium-sulfur batteries. *Journal of Solid State Electrochemistry*, **2019**, 23, 645-656	2.6	17
46	Improved Transport Properties and Novel Li Diffusion Dynamics in van der Waals C2N/Graphene Heterostructure as Anode Materials for Lithium-Ion Batteries: A First-Principles Investigation. *Journal of Physical Chemistry C*, **2019**, 123, 3353-3367	3.8	30
45	Enhanced light harvesting and electron-hole separation for efficient photocatalytic hydrogen evolution over Cu7S4-enwrapped Cu2O nanocubes. *Applied Catalysis B: Environmental*, **2019**, 246, 202-210	21.8	41
44	CNT-assembled dodecahedra core@nickel hydroxide nanosheet shell enabled sulfur cathode for high-performance lithium-sulfur batteries. *Nano Energy*, **2019**, 55, 82-92	17.1	154
43	Bilayer graphene with ripples for reverse osmosis desalination. *Carbon*, **2018**, 136, 21-27	10.4	23
42	Atomic Vacancies Control of Pd-Based Catalysts for Enhanced Electrochemical Performance. *Advanced Materials*, **2018**, 30, 1704171	24	74
41	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	11	4
40	Simultaneous Manipulation of O-Doping and Metal Vacancy in Atomically Thin Zn In S Nanosheet Arrays toward Improved Photoelectrochemical Performance. *Angewandte Chemie - International Edition*, **2018**, 57, 16882-16887	16.4	75
39	Simultaneous Manipulation of O-Doping and Metal Vacancy in Atomically Thin Zn10In16S34 Nanosheet Arrays toward Improved Photoelectrochemical Performance. *Angewandte Chemie*, **2018** , 130, 17124-17129	3.6	16
38	Mechanism on the Improved Performance of Lithium Sulfur Batteries with MXene-Based Additives. *Journal of Physical Chemistry C*, **2017**, 121, 11047-11054	3.8	84
37	Hollow spherical Lanthanum oxide coated separator for high electrochemical performance lithium-sulfur batteries. *Materials Research Bulletin*, **2017**, 94, 104-112	5.1	28
36	Separator modified by Y2O3 nanoparticles-Ketjen Black hybrid and its application in lithium-sulfur battery. *Journal of Solid State Electrochemistry*, **2017**, 21, 3229-3236	2.6	22

35	Ultrahigh energy storage and ultrafast ion diffusion in borophene-based anodes for rechargeable metal ion batteries. *Journal of Materials Chemistry A*, **2017**, 5, 2328-2338	13	95
34	Ca-Embedded CN: an efficient adsorbent for CO capture. *Physical Chemistry Chemical Physics*, **2017**, 19, 28323-28329	3.6	16
33	Rational Design and Strain Engineering of Nanoporous Boron Nitride Nanosheet Membranes for Water Desalination. *Journal of Physical Chemistry C*, **2017**, 121, 22105-22113	3.8	70
32	High rate lithium-sulfur batteries enabled by mesoporous TiO2 nanotubes prepared by electrospinning. *Materials Research Bulletin*, **2017**, 95, 402-408	5.1	24
31	Nanoporous MoS monolayer as a promising membrane for purifying hydrogen and enriching methane. *Journal of Physics Condensed Matter*, **2017**, 29, 375201	1.8	20
30	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	1.3	12
29	Mechanism of polysulfide immobilization on defective graphene sheets with N-substitution. *Carbon* , **2016**, 110, 207-214	10.4	68
28	CeO2 nanodots decorated ketjen black for high performance lithium–sulfur batteries. *RSC Advances*, **2016**, 6, 111190-111196	3.7	18
27	Efficient band structure tuning, charge separation, and visible-light response in ZrS2-based van der Waals heterostructures. *Energy and Environmental Science*, **2016**, 9, 841-849	35.4	123
26	Ketjen Black-MnO Composite Coated Separator For High Performance Rechargeable Lithium-Sulfur Battery. *Electrochimica Acta*, **2016**, 192, 346-356	6.7	98
25	Separator modified by Ketjen black for enhanced electrochemical performance of lithium–sulfur batteries. *RSC Advances*, **2016**, 6, 13680-13685	3.7	39
24	A separator modified by spray-dried hollow spherical cerium oxide and its application in lithium sulfur batteries. *RSC Advances*, **2016**, 6, 114989-114996	3.7	14
23	Synthesis of Tellurium Fusiform Nanoarchitectures by Controlled Living Nanowire Modification. *Journal of Physical Chemistry C*, **2016**, 120, 12305-12312	3.8	8
22	Mesoporous TiO2 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	2.6	20
21	Graphdiyne as a High-Efficiency Membrane for Separating Oxygen from Harmful Gases: A First-Principles Study. *ACS Applied Materials & Interfaces*, **2016**, 8, 28166-28170	9.5	48
20	Zn-MOF derived micro/meso porous carbon nanorod for high performance lithium–sulfur battery. *RSC Advances*, **2016**, 6, 94629-94635	3.7	27
19	Lithium decoration of three dimensional boron-doped graphene frameworks for high-capacity hydrogen storage. *Applied Physics Letters*, **2015**, 106, 063901	3.4	18
18	Mg0.6Ni0.4O hollow nanofibers prepared by electrospinning as additive for improving electrochemical performance of lithium–sulfur batteries. *Journal of Alloys and Compounds*, **2015**, 650, 351-356	5.7	45

17	Nickel fibers/sulfur composites cathode with enhanced electrochemical performance for rechargeable lithium-sulfur batteries. *Electrochimica Acta*, **2015**, 176, 442-447	6.7	26
16	Theoretical study of H2 adsorption on metal-doped graphene sheets with nitrogen-substituted defects. *International Journal of Hydrogen Energy*, **2015**, 40, 14154-14162	6.7	28
15	Hexagonal Boron Nitride with Designed Nanopores as a High-Efficiency Membrane for Separating Gaseous Hydrogen from Methane. *Journal of Physical Chemistry C*, **2015**, 119, 19826-19831	3.8	56
14	First-principles study on electronic and optical properties of Cu2ZnSiV I4 (VI=S, Se, and Te) quaternary semiconductors. *AIP Advances*, **2015**, 5, 057111	1.5	12
13	N-substituted defective graphene sheets: promising electrode materials for Na-ion batteries. *RSC Advances*, **2015**, 5, 17042-17048	3.7	24
12	A promising monolayer membrane for oxygen separation from harmful gases: nitrogen-substituted polyphenylene. *Nanoscale*, **2014**, 6, 9960-4	7.7	47
11	Electronic properties and hydrogen storage application of designed porous nanotubes from a polyphenylene network. *International Journal of Hydrogen Energy*, **2014**, 39, 18966-18975	6.7	28
10	Tunable band gap and hydrogen adsorption property of a two-dimensional porous polymer by nitrogen substitution. *Physical Chemistry Chemical Physics*, **2013**, 15, 666-70	3.6	20
9	Boron-substituted graphyne as a versatile material with high storage capacities of Li and H2: a multiscale theoretical study. *Physical Chemistry Chemical Physics*, **2013**, 15, 16120-6	3.6	78
8	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	6.7	33
7	Influences of lithium doping and fullerene impregnation on hydrogen storage in metal organic frameworks. *Molecular Simulation*, **2013**, 39, 968-974	2	10
6	Enhancement of Carbon Dioxide Adsorption by Lithium Decorating and Fullerene Encapsulating in Metal-Organic Frameworks. *Advanced Materials Research*, **2013**, 773, 927-931	0.5	
5	Prominently Improved Hydrogen Purification and Dispersive Metal Binding for Hydrogen Storage by Substitutional Doping in Porous Graphene. *Journal of Physical Chemistry C*, **2012**, 116, 21291-21296	3.8	68
4	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, 7698-700	5.8	53
3	Tuning the Metal Electronic Structure of Anchored Cobalt Phthalocyanine via Dual-Regulator for Efficient CO 2 Electroreduction and Zn CO 2 Batteries. *Advanced Functional Materials*,2110649	15.6	6
2	Tuning the Interaction between Ruthenium Single Atoms and the Second Coordination Sphere for Efficient Nitrogen Photofixation. *Advanced Functional Materials*,2112452	15.6	3
1	Self-reconstruction mediates isolated Pt tailored nanoframes for highly efficient catalysis. *Journal of Materials Chemistry A*,	13	1