## Challenges and prospects in the catalysis of electroredu

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Citation Report

#	Article	IF	CITATIONS
3	Tunable synthesis of multiply twinned intermetallic Pd <sub>3</sub> Pb nanowire networks toward efficient N <sub>2</sub> to NH <sub>3</sub> conversion. Journal of Materials Chemistry A, 2019, 7, 20247-20253.	5.2	39
4	<i>In situ</i> nano Au triggered by a metal boron organic polymer: efficient electrochemical N <sub>2</sub> fixation to NH <sub>3</sub> under ambient conditions. Journal of Materials Chemistry A, 2019, 7, 20945-20951.	5.2	46
5	High Nitrogen Gas Solubility and Physicochemical Properties of [C <sub>4</sub> mpyr][eFAP]–Fluorinated Solvent Mixtures. Journal of Physical Chemistry C, 2019, 123, 21376-21385.	1.5	23
6	Electrochemical Nitrogen Reduction: Identification and Elimination of Contamination in Electrolyte. ACS Energy Letters, 2019, 4, 2111-2116.	8.8	167
7	True or False in Electrochemical Nitrogen Reduction. Joule, 2019, 3, 1573-1575.	11.7	38
8	Catalytic resonance theory: superVolcanoes, catalytic molecular pumps, and oscillatory steady state. Catalysis Science and Technology, 2019, 9, 5058-5076.	2.1	43
9	Nitrogenâ€Doped NiO Nanosheet Array for Boosted Electrocatalytic N <sub>2</sub> Reduction. ChemCatChem, 2019, 11, 4529-4536.	1.8	74
10	Singleâ€Atom Catalysts for the Electrocatalytic Reduction of Nitrogen to Ammonia under Ambient Conditions. Chemistry - an Asian Journal, 2019, 14, 2770-2779.	1.7	32
11	Supported Nobleâ€Metal Single Atoms for Heterogeneous Catalysis. Advanced Materials, 2019, 31, e1902031.	11.1	207
12	High Efficiency Electrochemical Nitrogen Fixation Achieved with a Lower Pressure Reaction System by Changing the Chemical Equilibrium. Angewandte Chemie - International Edition, 2019, 58, 15541-15547.	7.2	164
13	Carbonâ€Nanoplated CoS@TiO <sub>2</sub> Nanofibrous Membrane: An Interfaceâ€Engineered Heterojunction for Highâ€Efficiency Electrocatalytic Nitrogen Reduction. Angewandte Chemie - International Edition, 2019, 58, 18903-18907.	7.2	119
14	Corrosion-Induced Cl-Doped Ultrathin Graphdiyne toward Electrocatalytic Nitrogen Reduction at Ambient Conditions. ACS Catalysis, 2019, 9, 10649-10655.	5.5	95
15	Carbonâ€Nanoplated CoS@TiO 2 Nanofibrous Membrane: An Interfaceâ€Engineered Heterojunction for Highâ€Efficiency Electrocatalytic Nitrogen Reduction. Angewandte Chemie, 2019, 131, 19079-19083.	1.6	22
16	Band structure engineering of bioinspired Fe doped SrMoO4 for enhanced photocatalytic nitrogen reduction performance. Nano Energy, 2019, 66, 104187.	8.2	71
17	High Efficiency Electrochemical Nitrogen Fixation Achieved with a Lower Pressure Reaction System by Changing the Chemical Equilibrium. Angewandte Chemie, 2019, 131, 15687-15693.	1.6	34
18	Photon-Induced, Timescale, and Electrode Effects Critical for the in Situ X-ray Spectroscopic Analysis of Electrocatalysts: The Water Oxidation Case. Journal of Physical Chemistry C, 2019, 123, 28533-28549.	1.5	24
19	Electrochemical Fixation of Nitrogen and Its Coupling with Biomass Valorization with a Strongly Adsorbing and Defect Optimized Boron–Carbon–Nitrogen Catalyst. ACS Applied Energy Materials, 2019, 2, 8359-8365.	2.5	43
20	New Mechanism for N <sub>2</sub> Reduction: The Essential Role of Surface Hydrogenation. Journal of the American Chemical Society, 2019, 141, 18264-18270.	6.6	166

#	Article	IF	CITATIONS
21	Transforming Energy with Single-Atom Catalysts. Joule, 2019, 3, 2897-2929.	11.7	216
22	Potassiumâ€Ionâ€Assisted Regeneration of Active Cyano Groups in Carbon Nitride Nanoribbons: Visibleâ€Lightâ€Driven Photocatalytic Nitrogen Reduction. Angewandte Chemie, 2019, 131, 16797-16803.	1.6	26
23	Potassiumâ€lonâ€Assisted Regeneration of Active Cyano Groups in Carbon Nitride Nanoribbons: Visibleâ€Lightâ€Driven Photocatalytic Nitrogen Reduction. Angewandte Chemie - International Edition, 2019, 58, 16644-16650.	7.2	356
24	Facilitating nitrogen accessibility to boron-rich covalent organic frameworks via electrochemical excitation for efficient nitrogen fixation. Nature Communications, 2019, 10, 3898.	5.8	191
25	Exploration of iron borides as electrochemical catalysts for the nitrogen reduction reaction. Journal of Materials Chemistry A, 2019, 7, 21507-21513.	5.2	49
26	Electrochemical Reduction of N <sub>2</sub> into NH <sub>3</sub> by Donor–Acceptor Couples of Ni and Au Nanoparticles with a 67.8% Faradaic Efficiency. Journal of the American Chemical Society, 2019, 141, 14976-14980.	6.6	290
27	Synergistic bimetallic CoFe <sub>2</sub> O <sub>4</sub> clusters supported on graphene for ambient electrocatalytic reduction of nitrogen to ammonia. Chemical Communications, 2019, 55, 12184-12187.	2.2	50
28	Defect Engineering in Photocatalytic Nitrogen Fixation. ACS Catalysis, 2019, 9, 9739-9750.	5.5	286
29	Copper Single Atoms Anchored in Porous Nitrogen-Doped Carbon as Efficient pH-Universal Catalysts for the Nitrogen Reduction Reaction. ACS Catalysis, 2019, 9, 10166-10173.	5.5	284
30	Sandwich-like reduced graphene oxide/yolk–shell-structured Fe@Fe <sub>3</sub> O <sub>4</sub> /carbonized paper as an efficient freestanding electrode for electrochemical synthesis of ammonia directly from H <sub>2</sub> O and nitrogen. Nanoscale, 2019, 11. 12997-13006.	2.8	30
31	Ambient dinitrogen electrocatalytic reduction for ammonia synthesis. Journal of Materials Chemistry A, 2019, 7, 23416-23431.	5.2	54
32	Lithium-mediated ammonia synthesis from water and nitrogen: a membrane-free approach enabled by an immiscible aqueous/organic hybrid electrolyte system. Green Chemistry, 2019, 21, 3839-3845.	4.6	30
33	A Versatile Method for Ammonia Detection in a Range of Relevant Electrolytes via Direct Nuclear Magnetic Resonance Techniques. ACS Catalysis, 2019, 9, 5797-5802.	5.5	97
34	Building Up a Picture of the Electrocatalytic Nitrogen Reduction Activity of Transition Metal Single-Atom Catalysts. Journal of the American Chemical Society, 2019, 141, 9664-9672.	6.6	642
35	Double Perovskites in Catalysis, Electrocatalysis, and Photo(electro)catalysis. Trends in Chemistry, 2019, 1, 410-424.	4.4	227
36	Role for Standardization in Electrocatalytic Ammonia Synthesis: A Conversation with Leo Liu, Lauren Greenlee, and Douglas MacFarlane. ACS Energy Letters, 2019, 4, 1432-1436.	8.8	23
37	Nitrogen Vacancies on 2D Layered W <sub>2</sub> N <sub>3</sub> : A Stable and Efficient Active Site for Nitrogen Reduction Reaction. Advanced Materials, 2019, 31, e1902709.	11.1	387
38	Advanced Nonâ€metallic Catalysts for Electrochemical Nitrogen Reduction under Ambient Conditions. Chemistry - A European Journal, 2019, 25, 12464-12485.	1.7	57

#	Article	IF	CITATIONS
39	Prospects and Challenges for Solar Fertilizers. Joule, 2019, 3, 1578-1605.	11.7	153
40	How to explore ambient electrocatalytic nitrogen reduction reliably and insightfully. Chemical Society Reviews, 2019, 48, 3166-3180.	18.7	670
41	Anion (O, N, C, and S) vacancies promoted photocatalytic nitrogen fixation. Green Chemistry, 2019, 21, 2852-2867.	4.6	121
42	Mo-based 2D MOF as a highly efficient electrocatalyst for reduction of N <sub>2</sub> to NH <sub>3</sub> : a density functional theory study. Journal of Materials Chemistry A, 2019, 7, 14510-14518.	5.2	139
43	Electrochemical Dinitrogen Reduction to Ammonia by Mo <sub>2</sub> N: Catalysis or Decomposition?. ACS Energy Letters, 2019, 4, 1053-1054.	8.8	114
44	Selective electroreduction of dinitrogen to ammonia on a molecular iron phthalocyanine/O-MWCNT catalyst under ambient conditions. Chemical Communications, 2019, 55, 14111-14114.	2.2	46
45	Self-organized growth of flower-like SnS <sub>2</sub> and forest-like ZnS nanoarrays on nickel foam for synergistic superiority in electrochemical ammonia synthesis. Journal of Materials Chemistry A, 2019, 7, 22235-22241.	5.2	66
46	Activated basal planes of WS <sub>2</sub> by intrinsic defects as catalysts for the electrocatalytic nitrogen reduction reaction. Journal of Materials Chemistry A, 2019, 7, 25961-25968.	5.2	47
47	Heading to Distributed Electrocatalytic Conversion of Small Abundant Molecules into Fuels, Chemicals, and Fertilizers. Joule, 2019, 3, 2602-2621.	11.7	86
48	Electronic Structural Origin of the Catalytic Activity Trend of Transition Metals for Electrochemical Nitrogen Reduction. Journal of Physical Chemistry C, 2019, 123, 31026-31031.	1.5	16
49	Electrochemical nitrogen fixation and utilization: theories, advanced catalyst materials and system design. Chemical Society Reviews, 2019, 48, 5658-5716.	18.7	541
50	A di-boron pair doped MoS <sub>2</sub> (B2@MoS <sub>2</sub> ) single-layer shows superior catalytic performance for electrochemical nitrogen activation and reduction. Nanoscale, 2019, 11, 18769-18778.	2.8	87
51	2D Electrocatalysts for Converting Earthâ€Abundant Simple Molecules into Valueâ€Added Commodity Chemicals: Recent Progress and Perspectives. Advanced Materials, 2020, 32, e1904870.	11.1	76
52	Recent Advanced Materials for Electrochemical and Photoelectrochemical Synthesis of Ammonia from Dinitrogen: One Step Closer to a Sustainable Energy Future. Advanced Energy Materials, 2020, 10, 1902020.	10.2	113
53	Synergistic Promotion of the Electrochemical Reduction of Nitrogen to Ammonia by Phosphorus and Potassium. ChemCatChem, 2020, 12, 334-341.	1.8	34
54	The application of metal-organic frameworks in electrocatalytic nitrogen reduction. Chinese Chemical Letters, 2020, 31, 1768-1772.	4.8	38
55	Single-atom catalysts for electrochemical clean energy conversion: recent progress and perspectives. Sustainable Energy and Fuels, 2020, 4, 996-1011.	2.5	36
56	Point-defect-optimized electron distribution for enhanced electrocatalysis: Towards the perfection of the imperfections. Nano Today, 2020, 31, 100833.	6.2	52

#	Article	IF	CITATIONS
57	Current and future role of Haber–Bosch ammonia in a carbon-free energy landscape. Energy and Environmental Science, 2020, 13, 331-344.	15.6	764
58	A vanadium–nickel oxynitride layer for enhanced electrocatalytic nitrogen fixation in neutral media. Journal of Materials Chemistry A, 2020, 8, 91-96.	5.2	42
59	Nanoporous Palladium Hydride for Electrocatalytic N <sub>2</sub> Reduction under Ambient Conditions. Angewandte Chemie - International Edition, 2020, 59, 3511-3516.	7.2	182
60	Support effect boosting the electrocatalytic N <sub>2</sub> reduction activity of Ni <sub>2</sub> P/N,P-codoped carbon nanosheet hybrids. Journal of Materials Chemistry A, 2020, 8, 2691-2700.	5.2	32
61	Materials for hydrogen-based energy storage – past, recent progress and future outlook. Journal of Alloys and Compounds, 2020, 827, 153548.	2.8	518
62	Antiperovskites with Exceptional Functionalities. Advanced Materials, 2020, 32, e1905007.	11.1	93
63	High-throughput screening of transition metal single atom catalysts anchored on molybdenum disulfide for nitrogen fixation. Nano Energy, 2020, 68, 104304.	8.2	136
64	Liquefied Sunshine: Transforming Renewables into Fertilizers and Energy Carriers with Electromaterials. Advanced Materials, 2020, 32, e1904804.	11.1	49
65	O-doped graphdiyne as metal-free catalysts for nitrogen reduction reaction. Molecular Catalysis, 2020, 483, 110705.	1.0	44
66	Nanoporous Palladium Hydride for Electrocatalytic N <sub>2</sub> Reduction under Ambient Conditions. Angewandte Chemie, 2020, 132, 3539-3544.	1.6	25
67	Molybdenum and boron synergistically boosting efficient electrochemical nitrogen fixation. Nano Energy, 2020, 78, 105391.	8.2	21
68	Towards Experimental Handbooks in Catalysis. Topics in Catalysis, 2020, 63, 1683-1699.	1.3	28
69	Electrochemical N <sub>2</sub> Reduction to Ammonia Using Single Au/Fe Atoms Supported on Nitrogen-Doped Porous Carbon. ACS Applied Energy Materials, 2020, 3, 10061-10069.	2.5	40
70	<i>In silico</i> design of novel NRR electrocatalysts: cobalt–molybdenum alloys. Chemical Communications, 2020, 56, 13343-13346.	2.2	20
71	In Situ Fragmented Bismuth Nanoparticles for Electrocatalytic Nitrogen Reduction. Advanced Energy Materials, 2020, 10, 2001289.	10.2	184
72	Active Site Engineering in Porous Electrocatalysts. Advanced Materials, 2020, 32, e2002435.	11.1	304
73	High-loading intrinsic active sites for ammonia synthesis using efficient single-atom catalyst: 2D tungsten-porphyrin sheet. Applied Surface Science, 2020, 529, 147183.	3.1	16
74	Atom-Pair Catalysts Supported by N-Doped Graphene for the Nitrogen Reduction Reaction: <i>d</i> -Band Center-Based Descriptor. Journal of Physical Chemistry Letters, 2020, 11, 6320-6329.	2.1	82

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#	Article	IF	Citations
75	Ruddlesden–Popper perovskites in electrocatalysis. Materials Horizons, 2020, 7, 2519-2565.	6.4	139
76	Oxygen-deficient SnO2 nanoparticles with ultrathin carbon shell for efficient electrocatalytic N2 reduction. Green Energy and Environment, 2022, 7, 672-679.	4.7	9
77	Competing Effects of pH, Cation Identity, H <sub>2</sub> O Saturation, and N <sub>2</sub> Concentration on the Activity and Selectivity of Electrochemical Reduction of N <sub>2</sub> to NH <sub>3</sub> on Electrodeposited Cu at Ambient Conditions. ACS Catalysis, 2020, 10, 14592-14603.	5.5	43
78	Regulating kinetics and thermodynamics of electrochemical nitrogen reduction with metal single-atom catalysts in a pressurized electrolyser. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 29462-29468.	3.3	104
79	DFT study of Ru/graphene as high-performance electrocatalyst for NRR. Inorganic Chemistry Communication, 2020, 120, 108169.	1.8	11
80	Rational Design of Metal–Organic Frameworks towards Efficient Electrocatalysis. , 2020, 2, 1251-1267.		65
81	Rational Design of Two-Dimensional Transition Metal Carbide/Nitride (MXene) Hybrids and Nanocomposites for Catalytic Energy Storage and Conversion. ACS Nano, 2020, 14, 10834-10864.	7.3	349
82	A zero-dimensional nickel, iron–metal–organic framework (MOF) for synergistic N <sub>2</sub> electrofixation. Journal of Materials Chemistry A, 2020, 8, 18810-18815.	5.2	52
83	Quantitative isotope measurements in heterogeneous photocatalysis and electrocatalysis. Energy and Environmental Science, 2020, 13, 2602-2617.	15.6	26
84	Identifying the Active Site on Graphene Oxide Nanosheets for Ambient Electrocatalytic Nitrogen Reduction. Inorganic Chemistry, 2020, 59, 11108-11112.	1.9	10
85	A rechargeable Al–N <sub>2</sub> battery for energy storage and highly efficient N <sub>2</sub> fixation. Energy and Environmental Science, 2020, 13, 2888-2895.	15.6	53
86	Boosting Electrocatalytic Ammonia Production through Mimicking "π Back-Donation― CheM, 2020, 6, 2690-2702.	5.8	88
87	Two-dimensional CuAg/Ti <sub>3</sub> C <sub>2</sub> catalyst for electrochemical synthesis of ammonia under ambient conditions: a combined experimental and theoretical study. Sustainable Energy and Fuels, 2020, 4, 5061-5071.	2.5	26
88	Cathodic NH <sub>4</sub> <sup>+</sup> leaching of nitrogen impurities in CoMo thin-film electrodes in aqueous acidic solutions. Sustainable Energy and Fuels, 2020, 4, 5080-5087.	2.5	14
89	Electrochemical reduction of nitrate to ammonia via direct eight-electron transfer using a copper–molecular solid catalyst. Nature Energy, 2020, 5, 605-613.	19.8	722
90	The FeN <sub>3</sub> Doped Fluorographene for N <sub>2</sub> Fixation: A Density Functional Theory Study. ChemistrySelect, 2020, 5, 9370-9376.	0.7	3
91	Electrosynthesis of Ammonia Using Porous Bimetallic Pd–Ag Nanocatalysts in Liquid- and Gas-Phase Systems. ACS Catalysis, 2020, 10, 10197-10206.	5.5	33
92	Lithium Iron Oxide (LiFeO <sub>2</sub> ) for Electroreduction of Dinitrogen to Ammonia. ACS Applied Materials & Interfaces, 2020, 12, 37258-37264.	4.0	70

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#	Article	IF	CITATIONS
93	Considering Electrocatalytic Ammonia Synthesis via Bimetallic Dinitrogen Cleavage. ACS Catalysis, 2020, 10, 10826-10846.	5.5	60
94	Controlled oxygen vacancy engineering on In <sub>2</sub> O <sub>3â^'x</sub> /CeO <sub>2â^'y</sub> nanotubes for highly selective and efficient electrocatalytic nitrogen reduction. Inorganic Chemistry Frontiers, 2020, 7, 3609-3619.	3.0	10
95	Isolated diatomic Zn–Fe in N-doped carbon for electrocatalytic nitrogen reduction to ammonia. Chemical Communications, 2020, 56, 11957-11960.	2.2	43
96	Advanced Electrocatalysts with Single-Metal-Atom Active Sites. Chemical Reviews, 2020, 120, 12217-12314.	23.0	563
97	Computational Design of Two-Dimensional Boron-Containing Compounds as Efficient Metal-free Electrocatalysts toward Nitrogen Reduction Independent of Heteroatom Doping. ACS Applied Materials & Interfaces, 2020, 12, 50505-50515.	4.0	20
98	Revealing nitrogen-containing species in commercial catalysts used for ammonia electrosynthesis. Nature Catalysis, 2020, 3, 1055-1061.	16.1	73
99	Robust Active Site Design of Single-Atom Catalysts for Electrochemical Ammonia Synthesis. Journal of Physical Chemistry C, 2020, 124, 23164-23176.	1.5	8
100	Atomically-precise dopant-controlled single cluster catalysis for electrochemical nitrogen reduction. Nature Communications, 2020, 11, 4389.	5.8	110
101	The Catalytic Mechanics of Dynamic Surfaces: Stimulating Methods for Promoting Catalytic Resonance. ACS Catalysis, 2020, 10, 12666-12695.	5.5	54
102	Ambient electrosynthesis of ammonia with efficient denitration. Nano Energy, 2020, 78, 105321.	8.2	110
103	Exploration and Investigation of Periodic Elements for Electrocatalytic Nitrogen Reduction. Small, 2020, 16, e2002885.	5.2	88
104	Highly Efficient Photo-/Electrocatalytic Reduction of Nitrogen into Ammonia by Dual-Metal Sites. ACS Central Science, 2020, 6, 1762-1771.	5.3	135
105	Hydrogen Bonding-Mediated Enhancement of Bioinspired Electrochemical Nitrogen Reduction on Cu <sub>2–<i>x</i></sub> S Catalysts. ACS Catalysis, 2020, 10, 10577-10584.	5.5	43
106	A spinel ferrite catalyst for efficient electroreduction of dinitrogen to ammonia. Dalton Transactions, 2020, 49, 12559-12564.	1.6	7
107	Preparation of Nafion Membranes for Reproducible Ammonia Quantification in Nitrogen Reduction Reaction Reaction Experiments. Angewandte Chemie - International Edition, 2020, 59, 22938-22942.	7.2	31
108	Preparation of Nafion Membranes for Reproducible Ammonia Quantification in Nitrogen Reduction Reaction Reaction Experiments. Angewandte Chemie, 2020, 132, 23138-23142.	1.6	16
109	Electrocatalytic dinitrogen reduction reaction on silicon carbide: a density functional theory study. Physical Chemistry Chemical Physics, 2020, 22, 21761-21767.	1.3	17
110	A DFT Study on Application of Dual-Atom Fe2/Phthalocyanine Catalyst for N2 Reduction Reaction. International Journal of Electrochemical Science, 2020, 15, 9698-9706.	0.5	7

#	Article	IF	CITATIONS
111	Plasma-Assisted Chain Reactions of Rh <sub>3</sub> <sup>+</sup> Clusters with Dinitrogen: N≡N Bond Dissociation. Journal of Physical Chemistry Letters, 2020, 11, 8222-8230.	2.1	15
112	Isoelectric Si Heteroatoms as Electron Traps for N <sub>2</sub> Fixation and Activation. Advanced Functional Materials, 2020, 30, 2005779.	7.8	26
113	Palladium Nanothorn Assembly Array for Efficient Electroreduction of Nitrogen to Ammonia. ACS Sustainable Chemistry and Engineering, 2020, 8, 14228-14233.	3.2	10
114	A Plasma-Water Droplet Reactor for Process-Intensified, Continuous Nitrogen Fixation at Atmospheric Pressure. ACS Sustainable Chemistry and Engineering, 2020, 8, 14845-14854.	3.2	45
115	Computational Screening Single-Atom Catalysts Supported on g-CN for N <sub>2</sub> Reduction: High Activity and Selectivity. ACS Sustainable Chemistry and Engineering, 2020, 8, 13749-13758.	3.2	167
116	Facet-Dependent Catalytic Performance of Au Nanocrystals for Electrochemical Nitrogen Reduction. ACS Applied Materials & Interfaces, 2020, 12, 41613-41619.	4.0	42
117	Gel Electrocatalysts: An Emerging Material Platform for Electrochemical Energy Conversion. Advanced Materials, 2020, 32, e2003191.	11.1	78
118	Are There Any Overlooked Catalysts for Electrochemical NH3 Synthesis—New Insights from Analysis of Thermochemical Data. IScience, 2020, 23, 101803.	1.9	36
119	Recent Progress of Carbon-Supported Single-Atom Catalysts for Energy Conversion and Storage. Matter, 2020, 3, 1442-1476.	5.0	196
120	Identification and elimination of false positives in electrochemical nitrogen reduction studies. Nature Communications, 2020, 11, 5546.	5.8	264
121	Electrocatalytically Active Feâ€(O <sub>2</sub> ) <sub>4</sub> Singleâ€Atom Sites for Efficient Reduction of Nitrogen to Ammonia. Angewandte Chemie - International Edition, 2020, 59, 13423-13429.	7.2	161
122	Non-aqueous gas diffusion electrodes for rapid ammonia synthesis from nitrogen and water-splitting-derived hydrogen. Nature Catalysis, 2020, 3, 463-469.	16.1	261
123	Electrode design for ammonia synthesis. Nature Catalysis, 2020, 3, 420-421.	16.1	28
124	Intercalation and exfoliation chemistries of transition metal dichalcogenides. Journal of Materials Chemistry A, 2020, 8, 15417-15444.	5.2	154
125	Fe doped SrWO <sub>4</sub> with tunable band structure for photocatalytic nitrogen fixation. Nanotechnology, 2020, 31, 375402.	1.3	23
126	Electrocatalytically Active Feâ€(O <sub>2</sub> ) <sub>4</sub> Singleâ€Atom Sites for Efficient Reduction of Nitrogen to Ammonia. Angewandte Chemie, 2020, 132, 13525-13531.	1.6	23
127	A Roadmap to the Ammonia Economy. Joule, 2020, 4, 1186-1205.	11.7	782
128	Rational Catalyst Design for N <sub>2</sub> Reduction under Ambient Conditions: Strategies toward Enhanced Conversion Efficiency. ACS Catalysis, 2020, 10, 6870-6899.	5.5	273

#	Article	IF	CITATIONS
129	Machine-Learning-Enabled Exploration of Morphology Influence on Wire-Array Electrodes for Electrochemical Nitrogen Fixation. Journal of Physical Chemistry Letters, 2020, 11, 4625-4630.	2.1	23
130	The in-built bionic "MoFe cofactor―in Fe-doped two-dimensional MoTe <sub>2</sub> nanosheets for boosting the photocatalytic nitrogen reduction performance. Journal of Materials Chemistry A, 2020, 8, 13038-13048.	5.2	30
131	Crystalline Red Phosphorus Nanoribbons: Largeâ€6cale Synthesis and Electrochemical Nitrogen Fixation. Angewandte Chemie, 2020, 132, 14489-14493.	1.6	9
132	Vacancyâ€Rich Ni(OH) <sub>2</sub> Drives the Electrooxidation of Amino Câ^'N Bonds to Nitrile C≡N Bonds. Angewandte Chemie - International Edition, 2020, 59, 16974-16981.	7.2	91
133	Potassium ions promote electrochemical nitrogen reduction on nano-Au catalysts triggered by bifunctional boron supramolecular assembly. Journal of Materials Chemistry A, 2020, 8, 13086-13094.	5.2	44
134	Vacancyâ€Rich Ni(OH) <sub>2</sub> Drives the Electrooxidation of Amino Câ^'N Bonds to Nitrile C≡N Bonds. Angewandte Chemie, 2020, 132, 17122-17129.	1.6	21
135	Of best practice in catalysis. Nature Catalysis, 2020, 3, 471-472.	16.1	9
136	Two-Dimensional Layered SnO <sub>2</sub> Nanosheets for Ambient Ammonia Synthesis. ACS Applied Energy Materials, 2020, 3, 6735-6742.	2.5	16
137	Crystalline Red Phosphorus Nanoribbons: Largeâ€6cale Synthesis and Electrochemical Nitrogen Fixation. Angewandte Chemie - International Edition, 2020, 59, 14383-14387.	7.2	58
138	Self-powered electrocatalytic ammonia synthesis directly from air as driven by dual triboelectric nanogenerators. Energy and Environmental Science, 2020, 13, 2450-2458.	15.6	84
139	Electrochemical Oxidation of Nitrogen towards Direct Nitrate Production on Spinel Oxides. Angewandte Chemie - International Edition, 2020, 59, 9418-9422.	7.2	108
140	Defective S/N co-doped carbon cloth <i>via</i> a one-step process for effective electroreduction of nitrogen to ammonia. RSC Advances, 2020, 10, 9814-9823.	1.7	11
141	Ru-doped, oxygen-vacancy-containing CeO <sub>2</sub> nanorods toward N <sub>2</sub> electroreduction. Journal of Materials Chemistry A, 2020, 8, 7229-7234.	5.2	45
142	An oxygen vacancy-rich two-dimensional Au/TiO <sub>2</sub> hybrid for synergistically enhanced electrochemical N <sub>2</sub> activation and reduction. Journal of Materials Chemistry A, 2020, 8, 6586-6596.	5.2	54
143	Electrocatalytic production of ammonia: Biomimetic electrode–electrolyte design for efficient electrocatalytic nitrogen fixation under ambient conditions. Applied Catalysis B: Environmental, 2020, 271, 118919.	10.8	55
144	Using waste as resource to realize a circular economy: Circular use of C, N and P. Current Opinion in Green and Sustainable Chemistry, 2020, 23, 61-66.	3.2	15
145	Nitrogen-Defective Polymeric Carbon Nitride Nanolayer Enabled Efficient Electrocatalytic Nitrogen Reduction with High Faradaic Efficiency. Nano Letters, 2020, 20, 2879-2885.	4.5	92
146	Unique hollow Ni–Fe@MoS <sub>2</sub> nanocubes with boosted electrocatalytic activity for N <sub>2</sub> reduction to NH <sub>3</sub> . Journal of Materials Chemistry A, 2020, 8, 7339-7349.	5.2	60

#	Article	IF	CITATIONS
147	Lowâ€Coordinate Step Atoms via Plasmaâ€Assisted Calcinations to Enhance Electrochemical Reduction of Nitrogen to Ammonia. Small, 2020, 16, e2000421.	5.2	24
148	Biomass-Derived Nitrogen-Doped Porous Carbon for Highly Efficient Ambient Electro-Synthesis of NH3. Catalysts, 2020, 10, 353.	1.6	7
149	A Janus Feâ€ <b>5</b> nO <sub>2</sub> Catalyst that Enables Bifunctional Electrochemical Nitrogen Fixation. Angewandte Chemie - International Edition, 2020, 59, 10888-10893.	7.2	192
150	Multi-yolk–shell bismuth@porous carbon as a highly efficient electrocatalyst for artificial N <sub>2</sub> fixation under ambient conditions. Inorganic Chemistry Frontiers, 2020, 7, 2006-2016.	3.0	15
151	Anchoring Au nanoparticles on Bi ultrathin nanosheets for use as an efficient heterogeneous catalyst for ambient-condition electrochemical ammonia synthesis. Sustainable Energy and Fuels, 2020, 4, 4516-4521.	2.5	12
152	Rigorous and reliable operations for electrocatalytic nitrogen reduction. Applied Catalysis B: Environmental, 2020, 278, 119325.	10.8	49
153	Unveiling the Essential Nature of Lewis Basicity in Thermodynamically and Dynamically Promoted Nitrogen Fixation. Advanced Functional Materials, 2020, 30, 2001244.	7.8	49
154	Ammonia Synthesis via Electrochemical Nitrogen Reduction Reaction on Iron Molybdate under Ambient Conditions. European Journal of Inorganic Chemistry, 2020, 2020, 3236-3241.	1.0	16
155	S-Doped three-dimensional graphene (S-3DG): a metal-free electrocatalyst for the electrochemical synthesis of ammonia under ambient conditions. Dalton Transactions, 2020, 49, 2258-2263.	1.6	20
156	Refining Universal Procedures for Ammonium Quantification via Rapid <sup>1</sup> H NMR Analysis for Dinitrogen Reduction Studies. ACS Energy Letters, 2020, 5, 736-741.	8.8	93
157	Bifunctional PtCu electrocatalysts for the N <sub>2</sub> reduction reaction under ambient conditions and methanol oxidation. Inorganic Chemistry Frontiers, 2020, 7, 1411-1419.	3.0	7
158	A two-dimensional Ru@MXene catalyst for highly selective ambient electrocatalytic nitrogen reduction. Nanoscale, 2020, 12, 10933-10938.	2.8	100
159	Efficient electrochemical N <sub>2</sub> fixation by doped-oxygen-induced phosphorus vacancy defects on copper phosphide nanosheets. Journal of Materials Chemistry A, 2020, 8, 5936-5942.	5.2	40
160	Proton-conducting oxides for energy conversion and storage. Applied Physics Reviews, 2020, 7, .	5.5	249
161	Dynamism of Supramolecular DNA/RNA Nanoarchitectonics: From Interlocked Structures to Molecular Machines. Bulletin of the Chemical Society of Japan, 2020, 93, 581-603.	2.0	75
162	Tackling the Activity and Selectivity Challenges of Electrocatalysts toward the Nitrogen Reduction Reaction via Atomically Dispersed Biatom Catalysts. Journal of the American Chemical Society, 2020, 142, 5709-5721.	6.6	664
163	Vacancy Engineering of Ironâ€Đoped W <sub>18</sub> O <sub>49</sub> Nanoreactors for Lowâ€Barrier Electrochemical Nitrogen Reduction. Angewandte Chemie - International Edition, 2020, 59, 7356-7361.	7.2	215
164	Formation of BNC Coordination to Stabilize the Exposed Active Nitrogen Atoms in gâ€C <sub>3</sub> N <sub>4</sub> for Dramatically Enhanced Photocatalytic Ammonia Synthesis Performance. Small, 2020, 16, e1906880.	5.2	88

#	Article	IF	CITATIONS
165	Vacancy Engineering of Ironâ€Ðoped W <sub>18</sub> O <sub>49</sub> Nanoreactors for Lowâ€Barrier Electrochemical Nitrogen Reduction. Angewandte Chemie, 2020, 132, 7426-7431.	1.6	26
166	The VN3 embedded graphane with the improved selectivity for nitrogen fixation. Applied Surface Science, 2020, 513, 145855.	3.1	23
167	MoS <sub>2</sub> -Supported Fe <sub>2</sub> Clusters Catalyzing Nitrogen Reduction Reaction to Produce Ammonia. Journal of Physical Chemistry C, 2020, 124, 6260-6266.	1.5	69
168	Recent advances in catalysts, electrolytes and electrode engineering for the nitrogen reduction reaction under ambient conditions. Nanoscale, 2020, 12, 6900-6920.	2.8	97
169	Ambient Ammonia Electrosynthesis from Nitrogen and Water by Incorporating Palladium in Bimetallic Gold–Silver Nanocages. Journal of the Electrochemical Society, 2020, 167, 054511.	1.3	30
170	Co-doped graphene edge for enhanced N2-to-NH3 conversion. Journal of Energy Chemistry, 2020, 48, 322-327.	7.1	40
171	Promotion of electrocatalytic nitrogen reduction reaction on N-doped porous carbon with secondary heteroatoms. Applied Catalysis B: Environmental, 2020, 266, 118633.	10.8	103
172	Overcoming Chemical Inertness under Ambient Conditions: A Critical View on Recent Developments in Ammonia Synthesis via Electrochemical N <sub>2</sub> Reduction by Asking Five Questions. ChemElectroChem, 2020, 7, 878-889.	1.7	32
173	Atomic Modulation, Structural Design, and Systematic Optimization for Efficient Electrochemical Nitrogen Reduction. Advanced Science, 2020, 7, 1902390.	5.6	73
174	Recent advances of MXene as promising catalysts for electrochemical nitrogen reduction reaction. Chinese Chemical Letters, 2020, 31, 953-960.	4.8	75
175	Heterogeneous Single Atom Electrocatalysis, Where "Singles―Are "Married― Advanced Energy Materials, 2020, 10, 1903181.	10.2	113
176	Enhanced performance in the direct electrocatalytic synthesis of ammonia from N2 and H2O by an in-situ electrochemical activation of CNT-supported iron oxide nanoparticles. Journal of Energy Chemistry, 2020, 49, 22-32.	7.1	31
177	Two-dimensional (2D)/2D Interface Engineering of a MoS <sub>2</sub> /C <sub>3</sub> N <sub>4</sub> Heterostructure for Promoted Electrocatalytic Nitrogen Fixation. ACS Applied Materials & Interfaces, 2020, 12, 7081-7090.	4.0	255
178	Phosphorus-doping activates carbon nanotubes for efficient electroreduction of nitrogen to ammonia. Nano Research, 2020, 13, 1376-1382.	5.8	61
179	Understanding the Electrocatalytic Interface for Ambient Ammonia Synthesis. ACS Energy Letters, 2020, 5, 430-436.	8.8	127
180	Artificial nitrogen fixation over bismuth-based photocatalysts: fundamentals and future perspectives. Journal of Materials Chemistry A, 2020, 8, 4978-4995.	5.2	97
181	Atomically Dispersed Single Ni Site Catalysts for Nitrogen Reduction toward Electrochemical Ammonia Synthesis Using N <sub>2</sub> and H <sub>2</sub> O. Small Methods, 2020, 4, 1900821.	4.6	148
182	PdAgCu Alloy Nanoparticles Integrated on Three-Dimensional Nanoporous CuO for Efficient Electrocatalytic Nitrogen Reduction under Ambient Conditions. Langmuir, 2020, 36, 5112-5117.	1.6	13

#	Article	IF	CITATIONS
183	<i>In situ</i> electrochemical reduction-assisted exfoliation: conversion of BiOCl nanoplates into Bi nanosheets enables efficient electrocatalytic nitrogen fixation. Sustainable Energy and Fuels, 2020, 4, 3334-3339.	2.5	15
184	A Highly Efficient Metalâ€Free Electrocatalyst of Fâ€Doped Porous Carbon toward N <sub>2</sub> Electroreduction. Advanced Materials, 2020, 32, e1907690.	11.1	105
185	Strain induced rich planar defects in heterogeneous WS <sub>2</sub> /WO <sub>2</sub> enable efficient nitrogen fixation at low overpotential. Journal of Materials Chemistry A, 2020, 8, 12996-13003.	5.2	45
186	Boosted electrochemical ammonia synthesis by high-percentage metallic transition metal dichalcogenide quantum dots. Nanoscale, 2020, 12, 10964-10971.	2.8	24
187	Electrochemical Oxidation of Nitrogen towards Direct Nitrate Production on Spinel Oxides. Angewandte Chemie, 2020, 132, 9504-9508.	1.6	31
188	A Janus Fe‧nO <sub>2</sub> Catalyst that Enables Bifunctional Electrochemical Nitrogen Fixation. Angewandte Chemie, 2020, 132, 10980-10985.	1.6	57
189	Alternative Strategies Toward Sustainable Ammonia Synthesis. Transactions of Tianjin University, 2020, 26, 67-91.	3.3	51
190	Graphdiyne coordinated transition metals as single-atom catalysts for nitrogen fixation. Physical Chemistry Chemical Physics, 2020, 22, 9216-9224.	1.3	76
191	Direct evidence of boosted oxygen evolution over perovskite by enhanced lattice oxygen participation. Nature Communications, 2020, 11, 2002.	5.8	366
192	Current Progress of Electrocatalysts for Ammonia Synthesis Through Electrochemical Nitrogen Reduction Under Ambient Conditions. ChemSusChem, 2020, 13, 3766-3788.	3.6	67
193	CuCo2S4 integrated multiwalled carbon nanotube as high-performance electrocatalyst for electroreduction of nitrogen to ammonia. International Journal of Hydrogen Energy, 2020, 45, 14640-14647.	3.8	17
194	Isotopically Selective Quantification by UPLC-MS of Aqueous Ammonia at Submicromolar Concentrations Using Dansyl Chloride Derivatization. ACS Energy Letters, 2020, 5, 1532-1536.	8.8	34
195	ZIF-supported AuCu nanoalloy for ammonia electrosynthesis from nitrogen and thin air. Journal of Materials Chemistry A, 2020, 8, 8868-8874.	5.2	30
196	Bimetallic Mo–Co nanoparticles anchored on nitrogen-doped carbon for enhanced electrochemical nitrogen fixation. Journal of Materials Chemistry A, 2020, 8, 9091-9098.	5.2	62
197	The Journey toward Low Temperature, Low Pressure Catalytic Nitrogen Fixation. Advanced Energy Materials, 2020, 10, 2000659.	10.2	127
198	A new trick on an old support: Zr in situ defects-created carbon nitride for efficient electrochemical nitrogen fixation. Journal of Energy Chemistry, 2021, 53, 109-115.	7.1	14
199	Heterogeneous single-cluster catalysts (Mn3, Fe3, Co3, and Mo3) supported on nitrogen-doped graphene for robust electrochemical nitrogen reduction. Journal of Energy Chemistry, 2021, 54, 612-619.	7.1	57
200	Nanoâ€Ferric Oxide Embedded in Graphene Oxide: Highâ€performance Electrocatalyst for Nitrogen Reduction at Ambient Condition, Energy and Environmental Materials, 2021, 4, 88-94.	7.3	44

ARTICLE IF CITATIONS Establishing a Theoretical Landscape for Identifying Basal Plane Active 2D Metal Borides (MBenes) 201 7.8 97 toward Nitrogen Electroreduction. Advanced Functional Materials, 2021, 31, 2008056. Ammonia Production Technologies., 2021, , 41-83. 28 Graphdiyne@Janus Magnetite for Photocatalytic Nitrogen Fixation. Angewandte Chemie, 2021, 133, 203 46 1.6 3207-3211. Zn nanosheets: An earth-abundant metallic catalyst for efficient electrochemical ammonia synthesis. 204 Journal of Energy Chemistry, 2021, 54, 318-322. Identifying electrocatalytic activity and mechanism of Ce1/3NbO3 perovskite for nitrogen reduction to 205 10.8 60 ammonia at ambient conditions. Applied Catalysis B: Environmental, 2021, 280, 119419. Advanced Electrocatalysis for Energy and Environmental Sustainability via Water and Nitrogen Reactions. Advanced Materials, 2021, 33, e2000381. 11.1 231 Electrocatalytic reduction of nitrogen on FeAg/Si for ammonia synthesis: A simple strategy for continuous regulation of faradaic efficiency by controlling H+ ions transfer rate. Applied Catalysis B: 207 10.8 21 Environmental, 2021, 283, 119606. Two-dimensional transition metal borides as highly efficient N2 fixation catalysts. Applied Surface 208 3.158 Science, 2021, 536, 147742. Metal-free boron carbonitride with tunable boron Lewis acid sites for enhanced nitrogen 209 10.8 108 electroreduction to ammonia. Applied Catalysis B: Environmental, 2021, 283, 119622. Gelâ€Derived Amorphous Bismuth–Nickel Alloy Promotes Electrocatalytic Nitrogen Fixation via Optimizing Nitrogen Adsorption and Activation. Angewandte Chemie - International Edition, 2021, 60, 7.2 4275-4281. Domino Effect: Gold Electrocatalyzing Lithium Reduction to Accelerate Nitrogen Fixation. 211 7.2 58 Angewandte Chemie - International Edition, 2021, 60, 5257-5261. Recent development and applications of electrical conductive MOFs. Nanoscale, 2021, 13, 485-509. 2.8 Nitrogenase inspired artificial photosynthetic nitrogen fixation. CheM, 2021, 7, 1431-1450. 213 5.8 43 Evaluation of electrocatalytic dinitrogen reduction performance on diamond carbon via density functional theory. Diamond and Related Materials, 2021, 111, 108210. 214 1.8 Molecular single iron site catalysts for electrochemical nitrogen fixation under ambient conditions. 215 10.8 58 Applied Catalysis B: Environmental, 2021, 285, 119794. Design of Local Atomic Environments in Singleâ€Atom Electrocatalysts for Renewable Energy 11.1 Conversions. Advanced Materials, 2021, 33, e2003075. Gelâ€Derived Amorphous Bismuth–Nickel Alloy Promotes Electrocatalytic Nitrogen Fixation via 217 1.6 10 Optimizing Nitrogen Adsorption and Activation. Angewandte Chemie, 2021, 133, 4321-4327. <i>Operando</i> spectroscopy of nanoscopic metal/covalent organic framework electrocatalysts. 2.8 Nanoscale, 2021, 13, 1507-1514.

ARTICLE IF CITATIONS Ammonia as an effective hydrogen carrier and a clean fuel for solid oxide fuel cells. Energy 219 4.4 214 Conversion and Management, 2021, 228, 113729. Recent progress in electrochemical synthesis of ammonia from nitrogen: strategies to improve the catalytic activity and selectivity. Energy and Environmental Science, 2021, 14, 672-687. 15.6 188 Defect-rich ZnS nanoparticles supported on reduced graphene oxide for high-efficiency ambient 221 10.8 46 N2-to-NH3 conversion. Applied Catalysis B: Environmental, 2021, 284, 119746. Electrospun zirconia nanofibers for enhancing the electrochemical synthesis of ammonia by artificial 44 nitrogen fixation. Journal of Materials Chemistry A, 2021, 9, 2145-2151. A shape-memory V<sub>3</sub>O<sub>7</sub>·H<sub>2</sub>O electrocatalyst for foldable 223 5.2 16 N<sub>2</sub> fixation. Journal of Materials Chemistry A, 2021, 9, 1603-1609. A multi-functional composite nitrogen carrier for ammonia production <i>via</i> a chemical looping route. Journal of Materials Chemistry A, 2021, 9, 1039-1047. 224 5.2 Domino Effect: Gold Electrocatalyzing Lithium Reduction to Accelerate Nitrogen Fixation. 225 1.6 12 Angewandte Chemie, 2021, 133, 5317-5321. Recent Advances in Electrochemical Water Splitting and Reduction of CO<sub>2</sub> into Green 1.8 14 Fuels on 2D Phosphoreneâ€Based Catalyst. Energy Technology, 2021, 9, . Graphene Derivatives and Graphene Composite Electrocatalysts for N<sub>2</sub> Reduction 227 6.9 36 Reaction. Small Structures, 2021, 2, 2000075. Graphdiyne@Janus Magnetite for Photocatalytic Nitrogen Fixation. Angewandte Chemie - International 7.2 174 Edition, 2021, 60, 3170-3174. In-situ decoration of unsaturated Cu sites on Cu2O photocathode for boosting nitrogen reduction 229 6.6 31 reaction. Chemical Engineering Journal, 2021, 413, 127453. Electrochemical synthesis of ammonia: Progress and challenges. Materials Today Physics, 2021, 16, 50 100310. High-throughput identification of high activity and selectivity transition metal single-atom catalysts 231 8.2 66 for nitrogen reduction. Nano Energy, 2021, 80, 105527. Oxygen vacancy engineering of calcium cobaltate: A nitrogen fixation electrocatalyst at ambient condition in neutral electrolyte. Nano Research, 2021, 14, 501-506. 5.8 Achieving ultrahigh electrocatalytic NH3 yield rate on Fe-doped Bi2WO6 electrocatalyst. Nano 233 5.8 34 Research, 2021, 14, 2711-2716. Defective Fe<sub>3</sub>GeTe<sub>2</sub> monolayer as a promising electrocatalyst for spontaneous nitrogen reduction reaction. Journal of Materials Chemistry A, 2021, 9, 6945-6954. 234 5.2 An advanced electrocatalyst for efficient synthesis of ammonia based on chemically coupled 235 NiS@MoS<sub>2</sub> heterostructured nanospheres. Sustainable Energy and Fuels, 2021, 5, 2.512 2640-2648. A fluidized electrocatalysis approach for ammonia synthesis using oxygen vacancy-rich Co<sub>3</sub>O<sub>4</sub> nanoparticles. Inorganic Chemistry Frontiers, 2021, 8, 4026-4034.

#	Article	IF	CITATIONS
237	Boosting NH <sub>3</sub> production from nitrate electroreduction <i>via</i> electronic structure engineering of Fe <sub>3</sub> C nanoflakes. Green Chemistry, 2021, 23, 7594-7608.	4.6	50
238	Reaction intermediate-mediated electrocatalyst synthesis favors specified facet and defect exposure for efficient nitrate–ammonia conversion. Energy and Environmental Science, 2021, 14, 4989-4997.	15.6	145
239	Multiâ€Scale Design of Metal–Organic Frameworkâ€Derived Materials for Energy Electrocatalysis. Advanced Energy Materials, 2022, 12, 2003410.	10.2	81
240	Efficient electrocatalytic nitrogen reduction to ammonia with aqueous silver nanodots. Communications Chemistry, 2021, 4, .	2.0	36
241	Harnessing Photoelectrochemistry for Wastewater Nitrate Treatment Coupled with Resource Recovery. ACS Sustainable Chemistry and Engineering, 2021, 9, 3688-3701.	3.2	15
242	Nanostructured metal phosphides: from controllable synthesis to sustainable catalysis. Chemical Society Reviews, 2021, 50, 7539-7586.	18.7	177
243	Core–Shell Functional Materials for Electrocatalysis. Nanostructure Science and Technology, 2021, , 303-342.	0.1	0
244	A comparative study of Bi, Sb, and BiSb for electrochemical nitrogen reduction leading to a new catalyst design strategy. Journal of Materials Chemistry A, 2021, 9, 20453-20465.	5.2	15
245	Atomic defects in pothole-rich two-dimensional copper nanoplates triggering enhanced electrocatalytic selective nitrate-to-ammonia transformation. Journal of Materials Chemistry A, 2021, 9, 16411-16417.	5.2	82
246	Gas diffusion electrodes (GDEs) for electrochemical reduction of carbon dioxide, carbon monoxide, and dinitrogen to value-added products: a review. Energy and Environmental Science, 2021, 14, 1959-2008.	15.6	243
247	Recent Progress in 2D Catalysts for Photocatalytic and Electrocatalytic Artificial Nitrogen Reduction to Ammonia. Advanced Energy Materials, 2021, 11, 2003294.	10.2	73
248	Metal–organic framework derived nanomaterials for electrocatalysis: recent developments for CO2 and N2 reduction. Nano Convergence, 2021, 8, 1.	6.3	84
249	Rational construction of Au <sub>3</sub> Cu@Cu nanocages with porous core–shell heterostructured walls for enhanced electrocatalytic N <sub>2</sub> fixation. Journal of Materials Chemistry A, 2021, 9, 8372-8377.	5.2	25
250	Electrochemical approach for biogas upgrading. , 2021, , 223-254.		2
251	One-step electrocatalytic synthesis of ammonia and acetone from nitrogen and isopropanol in an ionic liquid. Green Chemistry, 2021, 23, 7685-7691.	4.6	3
252	p-Block element-doped silicon nanowires for nitrogen reduction reaction: a DFT study. Nanoscale, 2021, 13, 14935-14944.	2.8	12
253	Lattice oxygen redox chemistry in solid-state electrocatalysts for water oxidation. Energy and Environmental Science, 2021, 14, 4647-4671.	15.6	190
254	Electrochemical oxidation of biomass derived 5-hydroxymethylfurfural (HMF): pathway, mechanism, catalysts and coupling reactions. Green Chemistry, 2021, 23, 4228-4254.	4.6	191

#	Article	IF	CITATIONS
255	Metal (Co/Mo)–N bond anchor-doped N in porous carbon for electrochemical nitrogen reduction. Inorganic Chemistry Frontiers, 2021, 8, 1476-1481.	3.0	15
256	Refining active sites and hydrogen spillover for boosting visible-light-driven ammonia synthesis at room temperature. Journal of Materials Chemistry A, 2021, 9, 22827-22832.	5.2	6
257	Electrochemical nitrogen reduction: recent progress and prospects. Chemical Communications, 2021, 57, 7335-7349.	2.2	74
258	Self-powered ammonia synthesis under ambient conditions via N2 discharge driven by Tesla turbine triboelectric nanogenerators. Microsystems and Nanoengineering, 2021, 7, 7.	3.4	24
259	Heterojunction-based photocatalytic nitrogen fixation: principles and current progress. Nanoscale Advances, 2021, 3, 6358-6372.	2.2	27
260	Multistep Functional Embellishment for p-ZnTe as a Cathode to Boost the Faraday Efficiency of Nitrogen Conversion. ACS Applied Materials & amp; Interfaces, 2021, 13, 8129-8137.	4.0	4
261	The Role of Defects in Metal–Organic Frameworks for Nitrogen Reduction Reaction: When Defects Switch to Features. Advanced Functional Materials, 2021, 31, 2010052.	7.8	92
262	Metal–Organic Frameworks Derived Functional Materials for Electrochemical Energy Storage and Conversion: A Mini Review. Nano Letters, 2021, 21, 1555-1565.	4.5	351
263	Electrochemical Reduction of Nitrogen to Ammonia by Pdâ€ <b>5</b> â€Mo Nanosheets on Hydrophobic Hierarchical Graphene Support. ChemElectroChem, 0, , .	1.7	1
265	Interfacial engineering of heterogeneous catalysts for electrocatalysis. Materials Today, 2021, 48, 115-134.	8.3	96
267	Inducing the Metal–Support Interaction and Enhancing the Ammonia Synthesis Activity of Ceria-Supported Ruthenium Catalyst via N <sub>2</sub> H <sub>4</sub> Reduction. ACS Sustainable Chemistry and Engineering, 2021, 9, 4885-4893.	3.2	24
268	Rational design on photo(electro)catalysts for artificial nitrogen looping. EcoMat, 2021, 3, e12096.	6.8	8
269	Interfacial Engineering Promoting Electrosynthesis of Ammonia over Mo/Phosphotungstic Acid with High Performance. Advanced Functional Materials, 2021, 31, 2009151.	7.8	47
270	Engineering of electrocatalyst/electrolyte interface for ambient ammonia synthesis. SusMat, 2021, 1, 150-173.	7.8	47
271	Controlling hydrogenation pathway by metal hydride enable efficient electrocatalytic N2 fixation. International Journal of Hydrogen Energy, 2021, 46, 14351-14358.	3.8	4
272	Bi-Atom Electrocatalyst for Electrochemical Nitrogen Reduction Reactions. Nano-Micro Letters, 2021, 13, 106.	14.4	10
273	Vacancy Engineering in Semiconductor Photocatalysts: Implications in Hydrogen Evolution and Nitrogen Fixation Applications. Advanced Functional Materials, 2021, 31, 2009807.	7.8	166
274	High-Throughput Screening of a Single-Atom Alloy for Electroreduction of Dinitrogen to Ammonia. ACS Applied Materials & Interfaces, 2021, 13, 16336-16344.	4.0	58

#	Article	IF	CITATIONS
275	Preliminary economics for green ammonia synthesis via lithium mediated pathway. International Journal of Energy Research, 2021, 45, 13461-13470.	2.2	7
276	Proton-filtering covalent organic frameworks with superior nitrogen penetration flux promote ambient ammonia synthesis. Nature Catalysis, 2021, 4, 322-331.	16.1	216
277	Zinc doped Fe2O3 for boosting Electrocatalytic Nitrogen Fixation to ammonia under mild conditions. International Journal of Hydrogen Energy, 2021, 46, 14331-14337.	3.8	14
278	Emerging Materials and Methods toward Ammoniaâ€Based Energy Storage and Conversion. Advanced Materials, 2021, 33, e2005721.	11.1	137
279	Challenges and opportunities for nitrogen reduction to ammonia on transitional metal nitrides via Mars-van Krevelen mechanism. Cell Reports Physical Science, 2021, 2, 100438.	2.8	27
280	Transition Metal Chalcogenides as a Versatile and Tunable Platform for Catalytic CO <sub>2</sub> and N <sub>2</sub> Electroreduction. ACS Materials Au, 2021, 1, 6-36.	2.6	55
281	Recent advances in TiO <sub>2</sub> â€based catalysts for N <sub>2</sub> reduction reaction. SusMat, 2021, 1, 174-193.	7.8	50
282	Atomically Dispersed Iron Metal Site in a Porphyrin-Based Metal–Organic Framework for Photocatalytic Nitrogen Fixation. ACS Nano, 2021, 15, 9670-9678.	7.3	127
283	Electrochemical ammonia synthesis via nitrate reduction on Fe single atom catalyst. Nature Communications, 2021, 12, 2870.	5.8	605
284	Oxidation State Modulation of Bismuth for Efficient Electrocatalytic Nitrogen Reduction to Ammonia. Advanced Functional Materials, 2021, 31, 2100300.	7.8	90
285	Salting-out effect promoting highly efficient ambient ammonia synthesis. Nature Communications, 2021, 12, 3198.	5.8	105
286	Toward a mechanistic understanding of electrocatalytic nanocarbon. Nature Communications, 2021, 12, 3288.	5.8	35
287	Catalyst-Support interactions enhanced electrochemical nitrogen reduction on Au/ZrO2. Electrochimica Acta, 2021, 381, 138222.	2.6	6
288	Electrochemical preparation of porous ZnCuNi by electrodeposition in ethaline deep eutectic solvent followed by anodic or cathodic dealloying in alkaline aqueous solutions for higher nitrate reduction activity. Journal of Electroanalytical Chemistry, 2021, 890, 115256.	1.9	4
289	Regulating the Catalytic Performance of a Dual-Atom Iron Species Deposited on Graphitic Carbon Nitride for Electrochemical Nitrogen Reduction. Journal of Physical Chemistry C, 2021, 125, 14253-14262.	1.5	18
290	Emerging artificial nitrogen cycle processes through novel electrochemical and photochemical synthesis. Materials Today, 2021, 46, 212-233.	8.3	104
291	Progress of Nonpreciousâ€Metalâ€Based Electrocatalysts for Oxygen Evolution in Acidic Media. Advanced Materials, 2021, 33, e2003786.	11.1	166
292	Tuning the Coordination Environment to Effect the Electrocatalytic Behavior of a Single-Atom Catalyst toward the Nitrogen Reduction Reaction. Journal of Physical Chemistry C, 2021, 125, 11963-11974.	1.5	21

#	Article	IF	CITATIONS
293	Electrocatalyst design strategies for ammonia production via N2 reduction. Catalysis Today, 2022, 388-389, 12-25.	2.2	17
294	Sulfurâ€Vacancy Defective MoS <sub>2</sub> as a Promising Electrocatalyst for Nitrogen Reduction Reaction under Mild Conditions. ChemElectroChem, 2021, 8, 3030-3039.	1.7	23
295	Semiâ€metal <scp>1T</scp> ′ phase <scp>MoS<sub>2</sub></scp> nanosheets for promoted electrocatalytic nitrogen reduction. EcoMat, 2021, 3, e12122.	6.8	15
296	Electrocatalytic Mechanism of N <sub>2</sub> Reduction Reaction by Single-Atom Catalyst Rectangular TM-TCNQ Monolayers. ACS Applied Materials & Interfaces, 2021, 13, 29641-29653.	4.0	42
297	Boosting electrocatalytic nitrogen reduction to ammonia in alkaline media. International Journal of Energy Research, 2021, 45, 19634-19644.	2.2	3
298	Nitrogen reduction to ammonia at high efficiency and rates based on a phosphonium proton shuttle. Science, 2021, 372, 1187-1191.	6.0	289
299	Strengthening nitrogen affinity on CuAu@Cu core–shell nanoparticles with ultrathin Cu skin via strain engineering and ligand effect for boosting nitrogen reduction reaction. Applied Catalysis B: Environmental, 2021, 288, 119999.	10.8	35
300	Promoting nitric oxide electroreduction to ammonia over electron-rich Cu modulated by Ru doping. Science China Chemistry, 2021, 64, 1493-1497.	4.2	83
301	Transition-metal-atom-pairs deposited on g-CN monolayer for nitrogen reduction reaction: Density functional theory calculations. Chinese Journal of Catalysis, 2021, 42, 1160-1167.	6.9	43
302	Achieving industrial ammonia synthesis rates at near-ambient conditions through modified scaling relations on a confined dual site. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	34
303	Electrochemical ammonia synthesis: Mechanistic understanding and catalyst design. CheM, 2021, 7, 1708-1754.	5.8	253
304	Intrinsic Electron Localization of Metastable MoS <sub>2</sub> Boosts Electrocatalytic Nitrogen Reduction to Ammonia. Advanced Materials, 2021, 33, e2007509.	11.1	96
305	Electrochemical synthesis of urea on MBenes. Nature Communications, 2021, 12, 4080.	5.8	147
306	Selective electrocatalytic synthesis of urea with nitrate and carbon dioxide. Nature Sustainability, 2021, 4, 868-876.	11.5	264
307	Electrochemically Selective Ammonia Extraction from Nitrate by Coupling Electron- and Phase-Transfer Reactions at a Three-Phase Interface. Environmental Science & Technology, 2021, 55, 10684-10694.	4.6	82
308	Photocatalytic Nitrogen Reduction: Challenging Materials with Reaction Engineering. ChemPhotoChem, 2021, 5, 792-807.	1.5	16
309	Boron Nitride Quantum Dots/Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> â€MXene Heterostructure For Efficient Electrocatalytic Nitrogen Fixation. Energy and Environmental Materials, 2022, 5, 1303-1309.	7.3	48
310	Comprehensive Understanding of the Thriving Ambient Electrochemical Nitrogen Reduction Reaction. Advanced Materials, 2021, 33, e2007650.	11.1	229

#	Article	IF	CITATIONS
311	Interaction of Ammonia with Nafion and Electrolyte in Electrocatalytic Nitrogen Reduction Study. Journal of Physical Chemistry Letters, 2021, 12, 6861-6866.	2.1	15
312	Ammonia-fed reversible protonic ceramic fuel cells with Ru-based catalyst. Communications Chemistry, 2021, 4, .	2.0	22
313	Hollow InVO <sub>4</sub> Nanocuboid Assemblies toward Promoting Photocatalytic N <sub>2</sub> Conversion Performance. Advanced Materials, 2021, 33, e2006780.	11.1	38
314	The rational adjusting of proton-feeding by Pt-doped FeP/C hollow nanorod for promoting nitrogen reduction kinetics. Applied Catalysis B: Environmental, 2021, 291, 120047.	10.8	43
315	Electrocatalytic Reduction of NO <sub>3</sub> <sup>–</sup> to Ultrapure Ammonia on {200} Facet Dominant Cu Nanodendrites with High Conversion Faradaic Efficiency. Journal of Physical Chemistry Letters, 2021, 12, 8121-8128.	2.1	39
316	Facile synthesis of bimetallic N-doped carbon hybrid material for electrochemical nitrogen reduction. Journal of Energy Chemistry, 2021, 59, 715-720.	7.1	10
317	Identification of Mâ€NH 2 â€NH 2 Intermediate and Rate Determining Step for Nitrogen Reduction with Bioinspired Sulfurâ€Bonded FeW Catalyst. Angewandte Chemie, 2021, 133, 20494-20504.	1.6	11
318	Electrocatalytic nitrate/nitrite reduction to ammonia synthesis using metal nanocatalysts and bio-inspired metalloenzymes. Nano Energy, 2021, 86, 106088.	8.2	136
319	Methods for nitrogen activation by reduction and oxidation. Nature Reviews Methods Primers, 2021, 1,	11.8	107
320	Revealing Ammonia Quantification Minefield in Photo/Electrocatalysis. Angewandte Chemie - International Edition, 2021, 60, 21728-21731.	7.2	63
321	Molecular Crowding Effect in Aqueous Electrolytes to Suppress Hydrogen Reduction Reaction and Enhance Electrochemical Nitrogen Reduction. Advanced Energy Materials, 2021, 11, 2101699.	10.2	73
322	On the Roles of Electron Transfer in Catalysis by Nanoclusters and Nanoparticles. Chemistry - A European Journal, 2021, 27, 16291-16308.	1.7	8
323	Revealing Ammonia Quantification Minefield in Photo/Electrocatalysis. Angewandte Chemie, 2021, 133, 21896-21899.	1.6	8
324	Monodisperse Cu Cluster-Loaded Defective ZrO <sub>2</sub> Nanofibers for Ambient N <sub>2</sub> Fixation to NH <sub>3</sub> . ACS Applied Materials & Interfaces, 2021, 13, 40724-40730.	4.0	13
325	Identification of Mâ€NH <sub>2</sub> â€NH <sub>2</sub> Intermediate and Rate Determining Step for Nitrogen Reduction with Bioinspired Sulfurâ€Bonded FeW Catalyst. Angewandte Chemie - International Edition, 2021, 60, 20331-20341.	7.2	65
326	Metal-free carbon-based nanomaterials for electrochemical nitrogen and carbon dioxide reductions. Materials Research Bulletin, 2021, 140, 111294.	2.7	10
327	Advances in Electrochemical Ammonia Synthesis Beyond the Use of Nitrogen Gas as a Source.		
	ChemPlusChem, 2021, 86, 1211-1224.	1.3	43

#	Article	IF	CITATIONS
329	Improving the ammonia synthesis activity of Ru/CeO2 through enhancement of the metal–support interaction. Journal of Energy Chemistry, 2021, 60, 403-409.	7.1	36
330	In-situ formation of bismuth nanoparticles on nickel foam for ambient ammonia synthesis via electrocatalytic nitrogen reduction. Journal of Alloys and Compounds, 2021, 875, 160006.	2.8	10
331	Precise synthesis of Fe–N2 with N vacancies coordination for boosting electrochemical artificial N2 fixation. Applied Catalysis B: Environmental, 2021, 293, 120216.	10.8	26
332	Recent progress of inorganic metal-based catalysts in electrocatalytic synthesis of ammonia. Materials Today Energy, 2021, 21, 100766.	2.5	22
333	Unveiling the Underlying Mechanism of Transition Metal Atoms Anchored Square Tetracyanoquinodimethane Monolayers as Electrocatalysts for N <sub>2</sub> Fixation. Energy and Environmental Materials, 2022, 5, 533-542.	7.3	25
334	Designing C3N-supported single atom catalysts for efficient nitrogen reduction based on descriptor of catalytic activity. Carbon, 2021, 182, 297-306.	5.4	22
335	2D gallium molybdenum selenide grown on a hollow carbon nanofibrous aerogel for high-efficiency electroreduction of nitrogen: Optimized basal plane activity via selenium vacancy modulation. Applied Catalysis B: Environmental, 2021, 292, 120175.	10.8	18
336	Lithium/bismuth co-functionalized phosphotungstic acid catalyst for promoting dinitrogen electroreduction with high Faradaic efficiency. Cell Reports Physical Science, 2021, 2, 100557.	2.8	11
337	MXenes and their derivatives as nitrogen reduction reaction catalysts: recent progress and perspectives. Materials Today Energy, 2021, 22, 100864.	2.5	24
338	Novel Design Strategy of High Activity Electrocatalysts toward Nitrogen Reduction Reaction via Boron–Transition-Metal Hybrid Double-Atom Catalysts. ACS Applied Materials & Interfaces, 2021, 13, 47520-47529.	4.0	76
339	Optimization of the salicylate method for ammonia quantification from nitrogen electroreduction. Journal of Electroanalytical Chemistry, 2021, 896, 115250.	1.9	11
340	Builtâ€in Electric Field Triggered Interfacial Accumulation Effect for Efficient Nitrate Removal at Ultraâ€Low Concentration and Electroreduction to Ammonia. Angewandte Chemie - International Edition, 2021, 60, 22933-22939.	7.2	145
341	Builtâ€in Electric Field Triggered Interfacial Accumulation Effect for Efficient Nitrate Removal at Ultra‣ow Concentration and Electroreduction to Ammonia. Angewandte Chemie, 2021, 133, 23115-23121.	1.6	8
342	Heterogeneous Two-Atom Single-Cluster Catalysts for the Nitrogen Electroreduction Reaction. Journal of Physical Chemistry C, 2021, 125, 19821-19830.	1.5	27
343	Achieving efficient N2 electrochemical reduction by stabilizing the N2H* intermediate with the frustrated Lewis pairs. Journal of Energy Chemistry, 2022, 66, 628-634.	7.1	13
344	The pitfalls in electrocatalytic nitrogen reduction for ammonia synthesis. Journal of Energy Chemistry, 2021, 61, 149-154.	7.1	32
345	Lithium-mediated electrochemical nitrogen reduction: Mechanistic insights to enhance performance. IScience, 2021, 24, 103105.	1.9	50
346	Computational prediction and experimental evaluation of nitrate reduction to ammonia on rhodium. Journal of Catalysis, 2021, 402, 1-9.	3.1	14

#	Article	IF	CITATIONS
347	Electrochemical reduction of nitrogen to ammonia: Progress, challenges and future outlook. Current Opinion in Electrochemistry, 2021, 29, 100808.	2.5	11
348	High temperature induced S vacancies in natural molybdenite for robust electrocatalytic nitrogen reduction. Journal of Colloid and Interface Science, 2021, 599, 849-856.	5.0	16
349	Enhancing the electrochemical activity and stability of Sb-SnO2 based electrodes by the introduction of nickel oxide. Journal of Alloys and Compounds, 2021, 882, 160700.	2.8	14
350	Modeling and simulation of Power-to-X systems: A review. Fuel, 2021, 304, 121354.	3.4	55
351	Triggering in-plane defect cluster on MoS2 for accelerated dinitrogen electroreduction to ammonia. Journal of Energy Chemistry, 2021, 62, 359-366.	7.1	40
352	Main group metal elements for ambient-condition electrochemical nitrogen reduction. Journal of Energy Chemistry, 2021, 62, 51-70.	7.1	70
353	Nitrogen-doped graphdiyne for efficient electrocatalytic <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" id="d1e292" altimg="si39.svg"&gt;<mml:msub><mml:mrow><mml:mi mathvariant="normal"&gt;N</mml:mi </mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow>reduction: A first-principles study. Applied Surface Science, 2021, 570, 151109.</mml:msub></mml:math 	3.1 > < /mml:m	14 ath>
354	Concave-convex surface oxide layers over copper nanowires boost electrochemical nitrate-to-ammonia conversion. Chemical Engineering Journal, 2021, 426, 130759.	6.6	110
355	Building of sub-monolayer MoS2-x structure to circumvent the scaling relations in N2-to-NH3 electrocatalysis. Applied Catalysis B: Environmental, 2021, 298, 120615.	10.8	20
356	Theory-guided design of nanoporous CuMn alloy for efficient electrocatalytic nitrogen reduction to ammonia. Chemical Engineering Journal, 2021, 426, 131843.	6.6	27
357	Selective reduction of nitrate to ammonium over charcoal electrode derived from natural wood. Chemosphere, 2021, 285, 131501.	4.2	16
358	Mo decoration on graphene edge for nitrogen fixation: A computational investigation. Applied Surface Science, 2021, 568, 150867.	3.1	11
359	Termination effects of single-atom decorated v-Mo2CTx MXene for the electrochemical nitrogen reduction reaction. Journal of Colloid and Interface Science, 2022, 605, 897-905.	5.0	25
360	Defect and interface engineering for electrochemical nitrogen reduction reaction under ambient conditions. Journal of Energy Chemistry, 2022, 65, 448-468.	7.1	38
361	Alternative ammonia production processes and the use of renewables. , 2022, , 243-258.		0
362	Sulfur vacancy engineering of MoS2 via phosphorus incorporation for improved electrocatalytic N2 reduction to NH3. Applied Catalysis B: Environmental, 2022, 300, 120733.	10.8	85
363	FeNi@CNS nanocomposite as an efficient electrochemical catalyst for N2-to-NH3 conversion under ambient conditions. Journal of Materials Science and Technology, 2022, 103, 59-66.	5.6	22
364	Engineering of bionic Fe/Mo bimetallene for boosting the photocatalytic nitrogen reduction performance. Journal of Colloid and Interface Science, 2022, 607, 1625-1632.	5.0	10

#	Article	IF	CITATIONS
365	First-principles screening of single transition metal atoms anchored on two-dimensional C9N4 for the nitrogen reduction reaction. Physical Chemistry Chemical Physics, 2021, 23, 8784-8791.	1.3	2
366	A tuned Lewis acidic catalyst guided by hard–soft acid–base theory to promote N <sub>2</sub> electroreduction. Journal of Materials Chemistry A, 2021, 9, 13036-13043.	5.2	19
367	An oxygen-coordinated molybdenum single atom catalyst for efficient electrosynthesis of ammonia. Chemical Communications, 2021, 57, 5410-5413.	2.2	24
368	Atomically-dispersed cobalt ions on polyphenol-derived nanocarbon layers to improve charge separation, hole storage, and catalytic activity of water-oxidation photoanodes. Journal of Materials Chemistry A, 2021, 9, 13874-13882.	5.2	11
369	High-throughput screening of single metal atom anchored on N-doped boron phosphide for N <sub>2</sub> reduction. Nanoscale, 2021, 13, 13437-13450.	2.8	18
370	Tuning metal single atoms embedded in N <sub>x</sub> C <sub>y</sub> moieties toward high-performance electrocatalysis. Energy and Environmental Science, 2021, 14, 3455-3468.	15.6	176
371	Highly efficient and selective nitrate electroreduction to ammonia catalyzed by molecular copper catalyst@Ti <sub>3</sub> C <sub>2</sub> T <sub><i>x</i></sub> MXene. Journal of Materials Chemistry A, 2021, 9, 21771-21778.	5.2	53
372	Strategies to suppress hydrogen evolution for highly selective electrocatalytic nitrogen reduction: challenges and perspectives. Energy and Environmental Science, 2021, 14, 1176-1193.	15.6	275
373	First principles and machine learning based superior catalytic activities and selectivities for N <sub>2</sub> reduction in MBenes, defective 2D materials and 2D π-conjugated polymer-supported single atom catalysts. Journal of Materials Chemistry A, 2021, 9, 9203-9213.	5.2	67
374	Can sustainable ammonia synthesis pathways compete with fossil-fuel based Haber–Bosch processes?. Energy and Environmental Science, 2021, 14, 2535-2548.	15.6	162
375	Simultaneous oxidative and reductive reactions in one system by atomic design. Nature Catalysis, 2021, 4, 134-143.	16.1	132
376	The effect of elastic strains on the adsorption energy of H, O, and OH in transition metals. Physical Chemistry Chemical Physics, 2021, 23, 21295-21306.	1.3	6
377	Development of Electrocatalysts for Efficient Nitrogen Reduction Reaction under Ambient Condition. Advanced Functional Materials, 2021, 31, 2008983.	7.8	124
378	A General Strategy to Glassy Mâ€Te (M = Ru, Rh, Ir) Porous Nanorods for Efficient Electrochemical N <sub>2</sub> Fixation. Advanced Materials, 2020, 32, e1907112.	11.1	111
379	Vanadium carbide with periodic anionic vacancies for effective electrocatalytic nitrogen reduction. Materials Today, 2020, 40, 18-25.	8.3	34
380	Electroreduction of Nitrates, Nitrites, and Gaseous Nitrogen Oxides: A Potential Source of Ammonia in Dinitrogen Reduction Studies. ACS Energy Letters, 2020, 5, 2095-2097.	8.8	170
381	Potential Economic Feasibility of Direct Electrochemical Nitrogen Reduction as a Route to Ammonia. ACS Sustainable Chemistry and Engineering, 2020, 8, 8938-8948.	3.2	75
382	Nitrogen electroreduction performance of transition metal dimers embedded into N-doped graphene: a theoretical prediction. Journal of Materials Chemistry A, 2020, 8, 4533-4543.	5.2	124

#	Article	IF	Citations
383	Two dimensional electrocatalyst engineering <i>via</i> heteroatom doping for electrocatalytic nitrogen reduction. Chemical Communications, 2020, 56, 14154-14162.	2.2	16
384	Is Molybdenum Disulfide Modified with Molybdenum Metal Catalytically Active for the Nitrogen Reduction Reaction?. Journal of the Electrochemical Society, 2020, 167, 146507.	1.3	16
385	Emerging two-dimensional nanomaterials for electrochemical nitrogen reduction. Chemical Society Reviews, 2021, 50, 12744-12787.	18.7	75
386	Ammonia Synthesis at Ambient Conditions via Electrochemical Atomic Hydrogen Permeation. ACS Energy Letters, 2021, 6, 3817-3823.	8.8	19
387	Methanol-Mediated Electrosynthesis of Ammonia. ACS Energy Letters, 2021, 6, 3844-3850.	8.8	50
388	Computational examination of the kinetics of electrochemical nitrogen reduction and hydrogen evolution on a tungsten electrode. Journal of Catalysis, 2021, 404, 362-370.	3.1	12
389	Uniform octahedral ZrO2@C from carbonized UiO-66 for electrocatalytic nitrogen reduction. Materials Today Energy, 2021, 22, 100884.	2.5	10
390	A General Strategy toward Metal Sulfide Nanoparticles Confined in a Sulfurâ€Doped Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> MXene 3D Porous Aerogel for Efficient Ambient N <sub>2</sub> Electroreduction. Small, 2021, 17, e2103305.	5.2	42
391	Electrochemistry-Assisted Photoelectrochemical Reduction of Nitrogen to Ammonia. Journal of Physical Chemistry C, 2021, 125, 23041-23049.	1.5	18
392	Advancement of Bismuthâ€Based Materials for Electrocatalytic and Photo(electro)catalytic Ammonia Synthesis. Advanced Functional Materials, 2022, 32, 2106713.	7.8	44
393	Elemental 2D Materials: Solutionâ€Processed Synthesis and Applications in Electrochemical Ammonia Production. Advanced Functional Materials, 2022, 32, 2107280.	7.8	20
394	Two-Dimensional Heterojunction Electrocatalyst: Au-Bi <sub>2</sub> Te <sub>3</sub> Nanosheets for Electrochemical Ammonia Synthesis. ACS Applied Materials & Interfaces, 2021, 13, 47458-47464.	4.0	24
396	Electrocatalytic oxidation of ammonia on Pt: Mechanistic insights into the formation of N2 in alkaline media. Journal of Catalysis, 2022, 405, 626-633.	3.1	17
397	Managing the Nitrogen Cycle via Plasmonic (Photo)Electrocatalysis: Toward Circular Economy. Accounts of Chemical Research, 2021, 54, 4294-4304.	7.6	22
399	Toward reliable and accessible ammonia quantification in the electrocatalytic reduction of nitrogen. Chem Catalysis, 2021, 1, 1505-1518.	2.9	20
400	Ammonia electrosynthesis on single-atom catalysts: Mechanistic understanding and recent progress. Chemical Physics Reviews, 2021, 2, .	2.6	17
401	High-loading metal atoms on graphdiyne for efficient nitrogen fixation to ammonia. Journal of Materials Chemistry A, 2022, 10, 6073-6077.	5.2	18
402	Understanding the Reversible Reactions of Liâ€N <sub>2</sub> Battery Catalyzed With SnO <sub>2</sub> . Energy and Environmental Materials, 2023, 6, .	7.3	7

ARTICLE IF CITATIONS Fe doped InVO4 nanosheets with rich surface oxygen vacancies for enhanced electrochemical 403 15 6.6 nitrogen fixation. Chemical Engineering Journal, 2022, 431, 133383. Development of Carbonâ€Based Electrocatalysts for Ambient Nitrogen Reduction Reaction: Challenges 404 1.7 9 and Perspectives. ChemElectroChem, 2022, 9, . Accelerated Discovery of Singleâ€Atom Catalysts for Nitrogen Fixation via Machine Learning. Energy and 405 7.3 26 Environmental Materials, 2023, 6, . Modulation of surface properties on cobalt phosphide for high-performance ambient ammonia 406 10.8 electrosynthesis. Applied Catalysis B: Environmental, 2022, 303, 120874. Asymmetrical I€ back-donation of hetero-dicationic Mo4+-Mo6+ pairs for enhanced electrochemical 407 5.8 22 nitrogen reduction. Nano Research, 2022, 15, 3010-3016. Fabrication of Pt-Nanoparticle-Loaded Mesoporous Alumina Coating through Anodizing of an Al-Pt Alloy. ECS Journal of Solid State Science and Technology, 2020, 9, 123003. 408 Reduction of N<sub>2</sub> to NH<sub>3</sub> catalyzed by a Keggin-type polyoxometalate-supported 409 3.0 7 dual-atom catalyst. Inorganic Chemistry Frontiers, 2022, 9, 845-858. Interface hydrophobic tunnel engineering: A general strategy to boost electrochemical conversion of N2 to NH3. Nano Energy, 2022, 92, 106784. 8.2 Computational screening of highly selective and active electrocatalytic nitrogen reduction on 411 single-atom-embedded artificial holey SnN3 monolayers. Journal of Colloid and Interface Science, 5.0 15 2022, 610, 546-556. Porous Î<sup>2</sup>-FeOOH nanotube stabilizing Au single atom for high-efficiency nitrogen fixation. Nano 5.8 Research, 2022, 15, 3026-3033. Investigation into the mechanism of electrochemical nitrogen reduction reaction to ammonia using 413 19 2.6 niobium oxynitride thin-film catalysts. Electrochimica Acta, 2022, 403, 139551. Engineering Nitrogen Vacancy in Polymeric Carbon Nitride for Nitrate Electroreduction to Ammonia. 4.0 ACS Applied Materials & amp; Interfaces, 2021, 13, 54967-54973. Rational Design of Graphene Derivatives for Electrochemical Reduction of Nitrogen to Ammonia. ACS 415 7.3 48 Nano, 2021, 15, 17275-17298. A review on sensing and catalytic activity of nano-catalyst for synthesis of one-step ammonia and 4.2 urea: Challenges and perspectives. Chemosphere, 2022, 291, 132806. Screening Highly Efficient Hetero-Diatomic Doped PC6 Electrocatalysts for Selective Nitrogen 417 1.3 3 Reduction to Ammonia. Journal of the Electrochemical Society, 2021, 168, 116519. Rational Design of Graphene-Supported Single-Atom Catalysts for Electroreduction of Nitrogen. 24 Inorganic Chemistry, 2021, 60, 18314-18324. Singleâ€Atomic Ruthenium Active Sites on Ti<sub>3</sub>C<sub>2</sub> MXene with Oxygenâ€Terminated 419 Surface Synchronize Enhanced Activity and Selectivity for Electrocatalytic Nitrogen Reduction to 3.6 17 Ammonia. ChemSusChem, 2022, 15, é202102352. Fe(III) grafted MoO3 nanorods for effective electrocatalytic fixation of atmospheric N2 to NH3. 3.8 International Journal of Hydrogen Energy, 2022, 47, 3550-3555.

#	Article	IF	CITATIONS
421	Singleâ€Atom Gold Isolated Onto Nanoporous MoSe <sub>2</sub> for Boosting Electrochemical Nitrogen Reduction. Small, 2022, 18, e2104043.	5.2	54
422	Boosting Nitrogen Reduction Reaction via Electronic Coupling of Atomically Dispersed Bismuth with Titanium Nitride Nanorods. Advanced Science, 2022, 9, e2104245.	5.6	44
423	Recent Advances in Metal–Gas Batteries with Carbonâ€Based Nonprecious Metal Catalysts. Small, 2022, 18, e2103747.	5.2	10
424	Photocatalytic reaction mechanisms at the gas–solid interface for environmental and energy applications. Catalysis Science and Technology, 2021, 11, 7807-7839.	2.1	12
425	In-Situ Construction of ZnO/Sb <sub>2</sub> MoO <sub>6</sub> Heterostructure for Efficient Visible-Light Photocatalytic N <sub>2</sub> Fixation to NH <sub>3</sub> . SSRN Electronic Journal, 0, ,	0.4	0
426	Discussion on the Key Links in the Process of Building Material Quality Inspection and Testing. MATEC Web of Conferences, 2021, 353, 01009.	0.1	Ο
427	Highly selective electroreduction of N <sub>2</sub> and CO <sub>2</sub> to urea over artificial frustrated Lewis pairs. Energy and Environmental Science, 2021, 14, 6605-6615.	15.6	130
428	In-Silico Screening the Nitrogen Reduction Reaction on Single-Atom Electrocatalysts Anchored on MoS2. Topics in Catalysis, 2022, 65, 234-241.	1.3	7
429	Tailoring Electronâ€Riched Boron Sites in BCN for Nitrogen Fixation via Alternate Mechanism. Advanced Materials Interfaces, 2022, 9, .	1.9	9
430	Electrocatalysis enabled transformation of earth-abundant water, nitrogen and carbon dioxide for a sustainable future. Materials Advances, 2022, 3, 1359-1400.	2.6	17
431	Ambient Electrochemical Nitrogen Fixation over a Bifunctional Mo–(O–C <sub>2</sub> ) <sub>4</sub> Site Catalyst. Journal of Physical Chemistry C, 2022, 126, 965-973.	1.5	15
432	Effectively boosting selective ammonia synthesis on electron-deficient surface of MoB2. Applied Catalysis B: Environmental, 2022, 305, 121023.	10.8	41
433	Greatly Enhanced Electrocatalytic Nitrogen Reduction by Efficient S-Doped Sb <sub>2</sub> O <sub>3</sub> Nanorods: Significance of Sulfur Doping. SSRN Electronic Journal, 0, , .	0.4	0
434	CO2 bubble-assisted in-situ construction of mesoporous Co-doped Cu2(OH)2CO3 nanosheets as advanced electrodes towards fast and highly efficient electrochemical reduction of nitrate to N2 in wastewater. Journal of Hazardous Materials, 2022, 430, 128351.	6.5	14
435	Emerging interstitial/substitutional modification of Pd-based nanomaterials with nonmetallic elements for electrocatalytic applications. Nanoscale, 2022, 14, 2915-2942.	2.8	11
436	Two-dimensional metal–organic framework Mo <sub>3</sub> (C <sub>2</sub> O) <sub>12</sub> as a promising single-atom catalyst for selective nitrogen-to-ammonia conversion. Journal of Materials Chemistry A, 2022, 10, 4731-4738.	5.2	20
437	High-efficiency ammonia electrosynthesis via selective reduction of nitrate on ZnCo2O4 nanosheet array. Materials Today Physics, 2022, 23, 100619.	2.9	72
438	Electrochemical Synthesis of Nitric Acid from Nitrogen Oxidation. Angewandte Chemie - International Edition, 2022, 61, .	7.2	47

#	Article	IF	CITATIONS
439	Electrochemical Synthesis of Nitric Acid from Nitrogen Oxidation. Angewandte Chemie, 2022, 134, .	1.6	6
440	Regulation of the electronic structure of perovskites to improve the electrocatalytic performance for the nitrogen-reduction reaction. Journal of Materials Chemistry A, 2022, 10, 2819-2825.	5.2	3
441	Iridiumâ€based electrocatalysts toward sustainable energy conversion. EcoMat, 2022, 4, .	6.8	16
442	Mechanistic Insights into Electrocatalytic Nitrogen Reduction Reaction on the Pdâ€W Heteronuclear Diatom Supported on C <sub>2</sub> N Monolayer: Role of H Preâ€Adsorption. Energy and Environmental Materials, 2023, 6, .	7.3	4
443	Progress in Mo/W-based electrocatalysts for nitrogen reduction to ammonia under ambient conditions. Chemical Communications, 2022, 58, 2096-2111.	2.2	7
444	Recent progress in the development of electrocatalysts for the electrochemical N <sub>2</sub> reduction reaction. Materials Advances, 2022, 3, 888-917.	2.6	7
445	Synergistic Effects of Crystal Phase and Strain for N <sub>2</sub> Dissociation on Ru(0001) Surfaces with Multilayered Hexagonal Close-Packed Structures. ACS Omega, 2022, 7, 4492-4500.	1.6	4
446	Synthesis, characterisation and carbon dioxide capture capacities of hierarchically porous Starbons <sup>®</sup> . Green Chemistry, 2022, 24, 1545-1560.	4.6	7
447	Interfacial Microextraction Boosting Nitrogen Feed for Efficient Ambient Ammonia Synthesis in Aqueous Electrolyte. Advanced Functional Materials, 2022, 32, .	7.8	41
448	Facile Synthesis and <scp>Highâ€Value</scp> Utilization of Ammonia. Chinese Journal of Chemistry, 2022, 40, 953-964.	2.6	14
449	Electroreduction of nitrogen to ammonia over bimetallic mesoporous RuAu film. Materials Today Energy, 2022, 23, 100920.	2.5	1
450	Perspectives on electrochemical nitrogen fixation catalyzed by two-dimensional MXenes. Materials Reports Energy, 2022, 2, 100076.	1.7	2
451	Efficient modulation of the catalytic performance of electrocatalytic nitrogen reduction with transition metals anchored on N/O-codoped graphene by coordination engineering. Journal of Materials Chemistry A, 2022, 10, 1481-1496.	5.2	43
452	Chromium phosphide nanoparticles embedded in porous nitrogenâ€∤phosphorusâ€doped carbon as efficient electrocatalysts for a nitrogen reduction reaction. , 2022, 4, 237-245.		26
453	Boosting nitrate electroreduction to ammonia on NbO <sub><i>x</i></sub> <i>via</i> constructing oxygen vacancies. Green Chemistry, 2022, 24, 1090-1095.	4.6	35
454	High-Throughput Screening of Efficient Biatom Catalysts Based on Monolayer Carbon Nitride for the Nitric Oxide Reduction Reaction. Journal of Physical Chemistry Letters, 2022, 13, 527-535.	2.1	35
455	Green ammonia synthesis using CeO <sub>2</sub> /RuO <sub>2</sub> nanolayers on vertical graphene catalyst <i>via</i> electrochemical route in alkaline electrolyte. Nanoscale, 2022, 14, 1395-1408.	2.8	11
456	High-ammonia selective metal–organic framework–derived Co-doped Fe/Fe <sub>2</sub> O <sub>3</sub> catalysts for electrochemical nitrate reduction. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	75

#	Article	IF	CITATIONS
457	Dealloying layered PdBi <sub>2</sub> nanoflakes to palladium hydride leads to enhanced electrocatalytic N <sub>2</sub> reduction. Journal of Materials Chemistry A, 2022, 10, 11904-11916.	5.2	6
458	Boosted electrolytic hydrogen production at tailor-tuned nano-dendritic Ni-doped Co foam-like catalyst. Electrochimica Acta, 2022, 410, 139992.	2.6	11
459	Electrochemical nitrogen reduction: an intriguing but challenging quest. Trends in Chemistry, 2022, 4, 142-156.	4.4	24
460	Active sites-rich layered double hydroxide for nitrate-to-ammonia production with high selectivity and stability. Chemical Engineering Journal, 2022, 434, 134641.	6.6	26
461	Promoting N2 electroreduction into NH3 over porous carbon by introducing oxygen-containing groups. Chemical Engineering Journal, 2022, 434, 134636.	6.6	9
462	Ultralow-content Pd in-situ incorporation mediated hierarchical defects in corner-etched Cu2O octahedra for enhanced electrocatalytic nitrate reduction to ammonia. Applied Catalysis B: Environmental, 2022, 306, 121094.	10.8	86
463	Controllable synthesis of a hollow Cr2O3 electrocatalyst for enhanced nitrogen reduction toward ammonia synthesis. Chinese Journal of Chemical Engineering, 2022, 41, 358-365.	1.7	4
464	Snâ€Doped Black Phosphorene for Enhancing the Selectivity of Nitrogen Electroreduction to Ammonia. Advanced Functional Materials, 2022, 32, .	7.8	41
465	Emerging Electrochemical Techniques for Probing Site Behavior in Single-Atom Electrocatalysts. Accounts of Chemical Research, 2022, 55, 759-769.	7.6	58
466	Engineering Reductive Iron on a Layered Double Hydroxide Electrocatalyst for Facilitating Nitrogen Reduction Reaction. Advanced Materials Interfaces, 2022, 9, .	1.9	19
467	Catalytic Kinetics Regulation for Enhanced Electrochemical Nitrogen Oxidation by Ruâ€Nanoclustersâ€Coupled Mn <sub>3</sub> O <sub>4</sub> Catalysts Decorated with Atomically Dispersed Ru Atoms. Advanced Materials, 2022, 34, e2108180.	11.1	57
468	In situ grown Fe3O4 particle on stainless steel: A highly efficient electrocatalyst for nitrate reduction to ammonia. Nano Research, 2022, 15, 3050-3055.	5.8	108
469	Insight into the Reactivity of Carbon Structures for Nitrogen Reduction Reaction. Langmuir, 2021, 37, 14657-14667.	1.6	5
470	Competition between metal-catalysed electroreduction of dinitrogen, protons, and nitrogen oxides: a DFT perspective. Catalysis Science and Technology, 2022, 12, 2856-2864.	2.1	8
471	Chemically Anchoring Molybdenum Atoms Onto Micropore-Rich Vn Nanosheet for Boosted Nitrogen Electro-Fixation Via Hydrogen Bonds. SSRN Electronic Journal, 0, , .	0.4	0
472	Efficient ammonia synthesis <i>via</i> electroreduction of nitrite using single-atom Ru-doped Cu nanowire arrays. Chemical Communications, 2022, 58, 5257-5260.	2.2	17
473	Defective 2D silicon phosphide monolayers for the nitrogen reduction reaction: a DFT study. Nanoscale, 2022, 14, 5782-5793.	2.8	10
474	Co–NCNT nanohybrid as a highly active catalyst for the electroreduction of nitrate to ammonia. Chemical Communications, 2022, 58, 3787-3790.	2.2	15

#	Article	IF	CITATIONS
475	Efficient Ammonia Synthesis Via Electroreduction of Nitrite Using Single-Atom Ru-Doped Cu Nanowire Arrays. SSRN Electronic Journal, 0, , .	0.4	0
476	Efficient Electrocatalytic N2fixation Over Bc3n2monolayer: A Computational Screening of Single-Atom Catalysts. SSRN Electronic Journal, 0, , .	0.4	0
477	Ambient ammonia production via electrocatalytic nitrate reduction catalyzed by flower-like CuCo2O4 electrocatalyst. Inorganic Chemistry Frontiers, 0, , .	3.0	8
478	Single-, double-, and triple-atom catalysts on graphene-like C <sub>2</sub> N enable electrocatalytic nitrogen reduction: insight from first principles. Catalysis Science and Technology, 2022, 12, 2604-2617.	2.1	15
479	A FeCo <sub>2</sub> O <sub>4</sub> nanowire array enabled electrochemical nitrate conversion to ammonia. Chemical Communications, 2022, 58, 4480-4483.	2.2	34
480	Coupling denitrification and ammonia synthesis <i>via</i> selective electrochemical reduction of nitric oxide over Fe <sub>2</sub> O <sub>3</sub> nanorods. Journal of Materials Chemistry A, 2022, 10, 6454-6462.	5.2	52
481	Metal-Coordinating Single-Boron Sites Confined in Antiperovskite Borides for N <sub>2</sub> -to-NH <sub>3</sub> Catalytic Conversion. ACS Catalysis, 2022, 12, 2967-2978.	5.5	11
482	Artificial frustrated Lewis pairs facilitating the electrochemical N2 and CO2 conversion to urea. Chem Catalysis, 2022, 2, 309-320.	2.9	89
483	Ultrathin two-dimensional metallenes for heterogeneous catalysis. Chem Catalysis, 2022, 2, 693-723.	2.9	39
484	Surface Valence State Effect of MoO <sub>2+</sub> <i><sub>x</sub></i> on Electrochemical Nitrogen Reduction. Advanced Science, 2022, 9, e2104857.	5.6	23
485	Delicate Tuning of the Ni/Co Ratio in Bimetal Layered Double Hydroxides for Efficient N <sub>2</sub> Electroreduction. ChemSusChem, 2022, 15, e202200127.	3.6	7
486	Facile synthesis of NiCo2O4 porous nanotubes with excellent electrocatalytic properties for methylene blue degradation. Journal of Materials Science: Materials in Electronics, 2022, 33, 7212-7226.	1.1	4
487	Field-induced reagent concentration and sulfur adsorption enable efficient electrocatalytic semihydrogenation of alkynes. Science Advances, 2022, 8, eabm9477.	4.7	40
489	Simple Bottom-Up Synthesis of Bismuthene Nanostructures with a Suitable Morphology for Competitive Performance in the Electrocatalytic Nitrogen Reduction Reaction. Inorganic Chemistry, 2022, 61, 5524-5538.	1.9	9
490	S-Doped Sb <sub>2</sub> O <sub>3</sub> Nanorods for Electrocatalytic Nitrogen Reduction. ACS Applied Nano Materials, 2022, 5, 3591-3598.	2.4	5
491	Electrocatalytic Reduction of Nitrogen to Ammonia in Ionic Liquids. ACS Sustainable Chemistry and Engineering, 2022, 10, 4345-4358.	3.2	21
492	Governing Interlayer Strain in Bismuth Nanocrystals for Efficient Ammonia Electrosynthesis from Nitrate Reduction. ACS Nano, 2022, 16, 4795-4804.	7.3	76
493	Electrocatalytic Reduction of Low-Concentration Nitric Oxide into Ammonia over Ru Nanosheets. ACS Energy Letters, 2022, 7, 1187-1194.	8.8	68

# 494	ARTICLE Amorphous Chromium Oxide with Hollow Morphology for Nitrogen Electrochemical Reduction under Ambient Conditions. ACS Applied Materials & Interfaces, 2022, 14, 14474-14481.	IF 4.0	CITATIONS 8
495	Tetrahedral W <sub>4</sub> cluster confined in graphene-like C <sub>2</sub> N enables electrocatalytic nitrogen reduction from theoretical perspective. Nanotechnology, 2022, 33, 245706.	1.3	8
496	Lowâ€Valence Metal Single Atoms on Graphdiyne Promotes Electrochemical Nitrogen Reduction via Mâ€ŧoâ€N <sub>2</sub> Ï€â€Backdonation. Advanced Functional Materials, 2022, 32, .	7.8	38
497	Breaking the linear correlations for enhanced electrochemical nitrogen reduction by carbon-encapsulated mixed-valence Fe7(PO4)6. Journal of Energy Chemistry, 2022, 71, 182-187.	7.1	11
498	Highly Active and Selective Electroreduction of N <sub>2</sub> by the Catalysis of Ga Single Atoms Stabilized on Amorphous TiO <sub>2</sub> Nanofibers. ACS Nano, 2022, 16, 4186-4196.	7.3	33
499	Potassium hydride-intercalated graphite as an efficient heterogeneous catalyst for ammonia synthesis. Nature Catalysis, 2022, 5, 222-230.	16.1	37
500	Surface Reconstruction on Uniform Cu Nanodisks Boosted Electrochemical Nitrate Reduction to Ammonia. , 2022, 4, 650-656.		42
501	Atomic Molybdenum for Synthesis of Ammonia with 50% Faradic Efficiency. Small, 2022, 18, e2106327.	5.2	20
502	A core–shell copper oxides-cobalt oxides heterostructure nanowire arrays for nitrate reduction to ammonia with high yield rate. Green Energy and Environment, 2023, 8, 1619-1629.	4.7	18
503	Revealing the Origin of Nitrogen Electroreduction Activity of Molybdenum Disulfide Supported Iron Atoms. Journal of Physical Chemistry C, 2022, 126, 5180-5188.	1.5	22
504	Optimizing Oxidation State of Octahedral Copper for Boosting Electroreduction Nitrate to Ammonia. ACS Applied Energy Materials, 2022, 5, 3339-3345.	2.5	21
505	High-Performance Electrochemical Nitrate Reduction to Ammonia under Ambient Conditions Using a FeOOH Nanorod Catalyst. ACS Applied Materials & Interfaces, 2022, 14, 17312-17318.	4.0	58
506	Nitrateâ€ŧoâ€Ammonia Conversion at an InSnâ€Enriched Liquidâ€Metal Electrode. Angewandte Chemie - International Edition, 2022, 61, .	7.2	34
507	Prognostication of two-dimensional transition-metal atoms embedded rectangular tetrafluorotetracyanoquinodimethane single-atom catalysts for high-efficiency electrochemical nitrogen reduction. Journal of Colloid and Interface Science, 2022, 621, 24-32.	5.0	10
508	Ni-Doped Mo <sub>2</sub> C Anchored on Graphitized Porous Carbon for Boosting Electrocatalytic N <sub>2</sub> Reduction. ACS Applied Materials & Interfaces, 2022, 14, 17273-17281.	4.0	12
509	Highly selective and durable of monodispersed metal atoms in ammonia production. Nano Today, 2022, 43, 101431.	6.2	27
510	Nitrateâ€ŧoâ€Ammonia Conversion at an InSnâ€Enriched Liquidâ€Metal Electrode. Angewandte Chemie, 0, , .	1.6	7
511	Nitrogen reduction reaction to ammonia at ambient conditions: A short review analysis of the critical factors limiting electrocatalytic performance. Current Opinion in Green and Sustainable Chemistry, 2022, 35, 100604.	3.2	11

#	Article	IF	CITATIONS
512	Layer structured materials for ambient nitrogen fixation. Coordination Chemistry Reviews, 2022, 460, 214468.	9.5	28
513	In-situ construction of ZnO/Sb2MoO6 nano-heterostructure for efficient visible-light photocatalytic conversion of N2 to NH3. Surfaces and Interfaces, 2022, 30, 101844.	1.5	8
514	Ball milling transformed electroplating sludges with different components to spinels for stable electrocatalytic ammonia production under ambient conditions. Chemosphere, 2022, 296, 134060.	4.2	4
515	Amorphous NiSb2O6– nanofiber: A d-/p-block Janus electrocatalyst toward efficient NH3 synthesis through boosted N2 adsorption and activation. Applied Catalysis B: Environmental, 2022, 308, 121225.	10.8	12
516	Novel platinum-bismuth alloy loaded KTa0.5Nb0.5O3 composite photocatalyst for effective nitrogen-to-ammonium conversion. Journal of Colloid and Interface Science, 2022, 618, 362-374.	5.0	51
517	Electrocatalytic nitrate reduction to ammonia on defective Au1Cu (111) single-atom alloys. Applied Catalysis B: Environmental, 2022, 310, 121346.	10.8	113
518	Electrocatalytic upcycling of nitrate and hydrogen sulfide via a nitrogen-doped carbon nanotubes encapsulated iron carbide electrode. Applied Catalysis B: Environmental, 2022, 310, 121291.	10.8	23
519	Enhancing electrocatalytic <scp>N<sub>2</sub></scp> reduction via tailoring the electric double layers. AICHE Journal, 2022, 68, .	1.8	17
520	Electrochemical Synthesis of Ammonium from Nitrates via Surface Engineering in Cu <sub>2</sub> O(100) Facets. ACS Applied Energy Materials, 2022, 5, 71-76.	2.5	24
521	Computational prediction of Mo2@g-C6N6 monolayer as an efficient electrocatalyst for N2 reduction. Chinese Chemical Letters, 2022, 33, 4623-4627.	4.8	24
522	Mo <sub>2</sub> C-MoO <sub>2</sub> Heterostructure Quantum Dots for Enhanced Electrocatalytic Nitrogen Reduction to Ammonia. ACS Nano, 2022, 16, 643-654.	7.3	55
523	Comparison between Fe <sub>2</sub> O <sub>3</sub> /C and Fe <sub>3</sub> C/Fe <sub>2</sub> O <sub>3</sub> /Fe/C Electrocatalysts for N <sub>2</sub> Reduction in an Alkaline Electrolyte. ACS Applied Materials & Interfaces, 2021, 13, 61316-61323.	4.0	7
524	Insights into Tuning of Moâ€Based Structures toward Enhanced Electrocatalytic Performance of Nitrogenâ€ŧoâ€Ammonia Conversion. Advanced Energy and Sustainability Research, 2022, 3, .	2.8	3
525	Recent advances in constructing heterojunctions of binary semiconductor photocatalysts for visible light responsive <scp> CO <sub>2</sub> </scp> reduction to energy efficient fuels: A review. International Journal of Energy Research, 2022, 46, 5523-5584.	2.2	32
526	Boron-Functionalized Organic Framework as a High-Performance Metal-Free Catalyst for N <sub>2</sub> Fixation. Journal of Physical Chemistry Letters, 2021, 12, 12142-12149.	2.1	9
527	CoO nanoparticle decorated N-doped carbon nanotubes: a high-efficiency catalyst for nitrate reduction to ammonia. Chemical Communications, 2022, 58, 5901-5904.	2.2	28
528	A novel Z-scheme Bi-Bi <sub>2</sub> O <sub>3</sub> /KTa <sub>0.5</sub> Nb <sub>0.5</sub> O <sub>3</sub> heterojunction for efficient photocatalytic conversion of N <sub>2</sub> to NH <sub>3</sub> . Inorganic Chemistry Frontiers, 2022, 9, 2714-2724.	3.0	53
529	Engineering strategies for boosting the nitrogen reduction reaction performance of MoS2-based electrocatalysts. Materials Today Nano, 2022, 18, 100202.	2.3	5

#	Article	IF	CITATIONS
530	A hybrid catalyst for efficient electrochemical N2 fixation formed by decorating amorphous MoS3 nanosheets with MIL-101(Fe) nanodots. Science China Chemistry, 2022, 65, 885-891.	4.2	13
531	How to Minimise Hydrogen Evolution on Carbon Based Materials?. Journal of the Electrochemical Society, 2022, 169, 054516.	1.3	6
532	Self-assembly synthesis of Ni-decorated Nb2C MXene as an efficient and stable catalyst towards electrochemical nitrogen reduction. Ceramics International, 2022, 48, 20599-20604.	2.3	10
533	Copper single-atom catalyst as a high-performance electrocatalyst for nitrate-ammonium conversion. Journal of Hazardous Materials, 2022, 434, 128892.	6.5	34
534	Atom-dispersed copper and nano-palladium in the boron-carbon-nitrogen matric cooperate to realize the efficient purification of nitrate wastewater and the electrochemical synthesis of ammonia. Journal of Hazardous Materials, 2022, 434, 128909.	6.5	21
535	Molybdenum-based nitrogen carrier for ammonia production via a chemical looping route. Applied Catalysis B: Environmental, 2022, 312, 121404.	10.8	22
536	Dataâ€Ðriven Materials Innovation and Applications. Advanced Materials, 2022, 34, e2104113.	11.1	51
537	Structural Reconstruction of Catalysts in Electroreduction Reaction: Identifying, Understanding, and Manipulating. Advanced Materials, 2022, 34, e2110699.	11.1	16
538	High-Efficiency N <sub>2</sub> Electroreduction Enabled by Se-Vacancy-Rich WSe <sub>2–<i>x</i></sub> in Water-in-Salt Electrolytes. ACS Nano, 2022, 16, 7915-7925.	7.3	128
539	Enhancing Electrochemical Nitrogen Fixation by Mimicking Î Back-Donation on Laser-Tuned Lewis Acid Sites in Noble-Metal-Molybdenum Carbide. SSRN Electronic Journal, 0, , .	0.4	0
540	Prospects and challenges for autonomous catalyst discovery viewed from an experimental perspective. Catalysis Science and Technology, 2022, 12, 3650-3669.	2.1	9
541	Immobilization of Iron Phthalocyanine on Pyridine-Functionalized Carbon Nanotubes for Efficient Nitrogen Reduction Reaction. ACS Catalysis, 2022, 12, 5502-5509.	5.5	36
542	Fe-doped SnO2 nanosheet for ambient electrocatalytic nitrogen reduction reaction. Nano Research, 2022, 15, 6026-6035.	5.8	24
543	Alkali Metal Salt Interference on the Salicylate Method for Quantifying Ammonia from Nitrogen Reduction. , 0, , .		4
544	Ammonia Concentration in Ambient Air in a Peri-Urban Area Using a Laser Photoacoustic Spectroscopy Detector. Materials, 2022, 15, 3182.	1.3	9
545	Saving the Energy Loss in Lithiumâ€Mediated Nitrogen Fixation by Using a Highly Reactive Li <sub>3</sub> N Intermediate for Câ^'N Coupling Reactions. Angewandte Chemie - International Edition, 2022, 61, .	7.2	13
546	PdFe Singleâ€Atom Alloy Metallene for N <sub>2</sub> Electroreduction. Angewandte Chemie, 2022, 134, .	1.6	69
547	Efficient conversion of low-concentration nitrate sources into ammonia on a Ru-dispersed Cu nanowire electrocatalyst. Nature Nanotechnology. 2022. 17. 759-767.	15.6	318

#	Article	IF	CITATIONS
548	High-entropy perovskite oxides: A versatile class of materials for nitrogen reduction reactions. Science China Materials, 2022, 65, 2711-2720.	3.5	13
549	Single-Atom Mo Anchored on a Poly(heptazine imide) Nanosheet as a Novel Electrocatalyst Showing Excellent Behavior toward Nitrogen Reduction Reaction. Journal of Physical Chemistry C, 2022, 126, 7859-7869.	1.5	5
550	PdFe Singleâ€Atom Alloy Metallene for N <sub>2</sub> Electroreduction. Angewandte Chemie - International Edition, 2022, 61, e202205923.	7.2	97
551	Saving the Energy Loss in Lithiumâ€Mediated Nitrogen Fixation by Using a Highly Reactive Li <sub>3</sub> N Intermediate for Câ^'N Coupling Reactions. Angewandte Chemie, 2022, 134, .	1.6	3
552	Sustainable N2 photofixation promoted by Fe-doped MoSy/CuxS grown on copper mesh. Optical Materials, 2022, 128, 112373.	1.7	3
553	Synergistic modulation of local environment for electrochemical nitrate reduction via asymmetric vacancies and adjacent ion clusters. Nano Energy, 2022, 98, 107338.	8.2	19
554	Chemically anchoring molybdenum atoms onto micropore-rich VN nanosheet for boosted nitrogen electro-fixation via hydrogen bonds. Chemical Engineering Journal, 2022, 446, 136915.	6.6	4
555	Boron induced electron-rich single iron sites for boosted N2 electroreduction reaction. Chemical Engineering Journal, 2022, 445, 136692.	6.6	10
556	Electroreduction of N <sub>2</sub> to NH <sub>3</sub> catalyzed by a Mn/Re(111) single-atom alloy catalyst with high activity and selectivity: a new insight from a first-principles study. Catalysis Science and Technology, 2022, 12, 4074-4085.	2.1	6
557	BiOCl-Fe <sub>2</sub> O <sub>3</sub> @TiO <sub>2</sub> Mesoporous Composite for Photoelectrochemical Synthesis of Ammonia. Acta Chimica Sinica, 2022, 80, 503.	0.5	0
558	Freeâ€Standing Nanoarrays with Energetic Electrons and Active Sites for Efficient Plasmonâ€Driven Ammonia Synthesis. Small, 2022, 18, e2201269.	5.2	6
559	Mn-Doped Bi <sub>2</sub> O <sub>3</sub> Nanosheets from a Deep Eutectic Solvent toward Enhanced Electrocatalytic N <sub>2</sub> Reduction. ACS Sustainable Chemistry and Engineering, 2022, 10, 6766-6774.	3.2	15
560	Electrocatalytic green ammonia production beyond ambient aqueous nitrogen reduction. Chemical Engineering Science, 2022, 257, 117735.	1.9	41
561	Effect of local coordination on catalytic activities and selectivities of Fe-based catalysts for N <sub>2</sub> reduction. Physical Chemistry Chemical Physics, 2022, 24, 14517-14524.	1.3	1
562	Reduction of nitrate to ammonia using photocatalytically accumulated electrons on titanium(IV) oxide in a time-separated redox reaction. Inorganic Chemistry Communication, 2022, 141, 109585.	1.8	6
563	Bio-inspired NiCoP/CoMoP/Co(Mo3Se4)4 @C/NF multi-heterojunction nanoflowers:Effective catalytic nitrogen reduction by driving electron transfer. Applied Catalysis B: Environmental, 2022, 314, 121531.	10.8	23
564	Reassessment of the catalytic activity of bismuth for aqueous nitrogen electroreduction. Nature Catalysis, 2022, 5, 382-384.	16.1	14
565	Electrocatalytic Ammonia Synthesis Using a Fe@Mxene Catalyst as Cathode of High-Temperature Proton-Conducting Solid Oxide Cell. SSRN Electronic Journal, 0, , .	0.4	0

#	Article	IF	CITATIONS
566	"Capture-Backdonation-Recapture―Mechanism for Promoting N <sub>2</sub> Reduction by Heteronuclear Metal-Free Double-Atom Catalysts. Journal of the American Chemical Society, 2022, 144, 9344-9353.	6.6	102
567	Flexible 2D Cu Metal: Organic Framework@MXene Film Electrode with Excellent Durability for Highly Selective Electrocatalytic NH <sub>3</sub> Synthesis. Research, 2022, 2022, .	2.8	16
568	Modulating the Oxidation State of Titanium via Dual Anions Substitution for Efficient N <sub>2</sub> Electroreduction. Small, 2022, 18, .	5.2	16
569	Strategic tailored design of electrocatalysts for environmental remediation based on density functional theory (DFT) and microkinetic modeling. Current Opinion in Electrochemistry, 2022, 35, 101062.	2.5	13
570	Highly Durable and Selective Fe- and Mo-Based Atomically Dispersed Electrocatalysts for Nitrate Reduction to Ammonia via Distinct and Synergized NO <sub>2</sub> <sup>–</sup> Pathways. ACS Catalysis, 2022, 12, 6651-6662.	5.5	58
571	Feâ€based catalysts for nitrogen reduction toward ammonia electrosynthesis under ambient conditions. SusMat, 2022, 2, 214-242.	7.8	35
572	On the Optimization of Nitrogenâ€Reduction Electrocatalysts: Breaking Scaling Relation or Catalytic Resonance Theory?. ChemCatChem, 2022, 14, .	1.8	11
573	Mechanistic exploring the catalytic activity of single-atom catalysts anchored in graphitic carbon nitride toward electroreduction of nitrate-to-ammonia. Applied Surface Science, 2022, 598, 153829.	3.1	18
574	Synergistic effect of a diatomic boron-doped layered two-dimensional MSi <sub>2</sub> N <sub>4</sub> monolayer for an efficient electrochemical nitrogen reduction. Journal of Materials Chemistry A, 2022, 10, 14820-14827.	5.2	5
575	High-performance electrochemical nitrate reduction to ammonia under ambient conditions using NiFe <sub>2</sub> O <sub>4</sub> nanosheet arrays. Inorganic Chemistry Frontiers, 2022, 9, 3392-3397.	3.0	25
576	A novel porous graphitic carbon nitride (g-C <sub>7</sub> N <sub>3</sub> ) substrate: prediction of metal-based l€â€"d conjugated nanosheets toward the highly active and selective electrocatalytic nitrogen reduction reaction. Journal of Materials Chemistry A, 2022, 10, 15036-15050.	5.2	20
577	Efficient electrocatalytic nitrate reduction via boosting oxygen vacancies of TiO2 nanotube array by highly dispersed trace Cu doping. Journal of Hazardous Materials, 2022, 438, 129455.	6.5	32
578	Regulation of Electronic Structures to Boost Efficient Nitrogen Fixation: Synergistic Effects between Transition Metals and Boron Nanotubes. ACS Applied Materials & Interfaces, 0, , .	4.0	1
579	Defective UiO-66-NH <sub>2</sub> Functionalized with Stable Superoxide Radicals toward Electrocatalytic Nitrogen Reduction with High Faradaic Efficiency. ACS Applied Materials & Interfaces, 2022, 14, 26571-26586.	4.0	15
580	Photosynthetic biohybrid coculture for tandem and tunable CO <sub>2</sub> and N <sub>2</sub> fixation. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	14
581	High-throughput identification of highly active and selective single-atom catalysts for electrochemical ammonia synthesis through nitrate reduction. Nano Energy, 2022, 100, 107517.	8.2	49
582	Ultra-efficient N2 electroreduction achieved over a rhodium single-atom catalyst (Rh1/MnO2) in water-in-salt electrolyte. Applied Catalysis B: Environmental, 2022, 316, 121651.	10.8	56
583	"Sabatier principle―of d electron number for describing the nitrogen reduction reaction performance of single-atom alloy catalysts. Journal of Materials Chemistry A, 2022, 10, 16900-16907.	5.2	22

#	Article	IF	CITATIONS
584	Interface coupling induced built-in electric fields boost electrochemical nitrate reduction to ammonia over CuO@MnO <sub>2</sub> core–shell hierarchical nanoarrays. Journal of Materials Chemistry A, 2022, 10, 16883-16890.	5.2	32
585	Theoretical insights into the electroreduction of nitrate to ammonia on graphene-based single-atom catalysts. Nanoscale, 2022, 14, 10862-10872.	2.8	57
586	Enhancing Electrocatalytic Nitrogen Fixation Beyond Coherent Heterointerfacial Boundaries. SSRN Electronic Journal, 0, , .	0.4	0
587	Phase-Separated Cuag Alloy Interfacial Stress Induced Cu Defects for Efficient N2 Activation and Electrocatalytic Reduction. SSRN Electronic Journal, 0, , .	0.4	0
588	Enhanced electrocatalytic nitrate reduction to ammonia using plasmaâ€induced oxygen vacancies in CoTiO <sub>3 ⴒ <i>x</i></sub> nanofiber. , 2022, 1, 6-13.		13
589	Plasmaâ€Assisted Dinitrogen Activation on Small Cobalt Clusters: Co <sub>4</sub> N <sub>9</sub> <sup>+</sup> with Enhanced Stability. ChemPhysChem, 2022, 23, .	1.0	6
590	Facile Synthesis of Carbon Nanobelts Decorated with Cu and Pd for Nitrate Electroreduction to Ammonia. ACS Applied Materials & amp; Interfaces, 2022, 14, 30969-30978.	4.0	30
591	Potential-Driven Restructuring of Cu Single Atoms to Nanoparticles for Boosting the Electrochemical Reduction of Nitrate to Ammonia. Journal of the American Chemical Society, 2022, 144, 12062-12071.	6.6	192
592	High-Efficiency Electrosynthesis of Ammonia with Selective Reduction of Nitrate in Neutral Media Enabled by Self-Supported Mn <sub>2</sub> CoO <sub>4</sub> Nanoarray. ACS Applied Materials & Interfaces, 2022, 14, 33242-33247.	4.0	27
593	Effects of Stearic Acid Modification on Ruâ^'Baâ^'MgO Interaction and the Underlying Mechanism. ChemistrySelect, 2022, 7, .	0.7	1
594	Reconstructing the Linear Relations by Designing Bi-Atom Sites on NbS <sub>2</sub> for the Efficient Nitrogen Reduction Reaction. Journal of the Electrochemical Society, 2022, 169, 076506.	1.3	0
595	How the Bioinspired Fe <sub>2</sub> Mo <sub>6</sub> S <sub>8</sub> Chevrel Breaks Electrocatalytic Nitrogen Reduction Scaling Relations. Journal of the American Chemical Society, 2022, 144, 12800-12806.	6.6	29
596	Progress of Experimental and Computational Catalyst Design for Electrochemical Nitrogen Fixation. ACS Catalysis, 2022, 12, 8936-8975.	5.5	41
597	Recent advances in the chemistry of nitrogen, phosphorus and potassium as fertilizers in soil: A review. Pedosphere, 2023, 33, 385-406.	2.1	14
598	A Reliable and Precise Protocol for Urea Quantification in Photo/Electrocatalysis. Small Methods, 2022, 6, .	4.6	26
599	Fundamentals and Advances in Emerging Crystalline Porous Materials for Photocatalytic and Electrocatalytic Nitrogen Fixation. ACS Applied Energy Materials, 2022, 5, 9241-9265.	2.5	13
600	Crystalline—amorphous interfaces of NiO-CrOx electrocatalysts for boosting the urea oxidation reaction. Nano Research, 2023, 16, 3665-3671.	5.8	28
601	Filling Mesopores of Conductive Metal–Organic Frameworks with Cu Clusters for Selective Nitrate Reduction to Ammonia. ACS Applied Materials & Interfaces, 2022, 14, 32176-32182.	4.0	16

#	Article	IF	CITATIONS
602	Bismuth Ferrite as an Electrocatalyst for the Electrochemical Nitrate Reduction. Nano Letters, 2022, 22, 5600-5606.	4.5	35
603	Fe single-atom catalysts with pre-organized coordination structure for efficient electrochemical nitrate reduction to ammonia. Applied Catalysis B: Environmental, 2022, 317, 121750.	10.8	55
604	High-efficiency Electrochemical Dechlorination Using an Atomically Dispersed Co Catalyst in an Aqueous Phase. International Journal of Electrochemical Science, 2022, 17, 220834.	0.5	2
605	Anchored Fe atoms for N O bond activation to boost electrocatalytic nitrate reduction at low concentrations. Applied Catalysis B: Environmental, 2022, 317, 121721.	10.8	27
606	Density Functional Theory Studies on Boron-Modified Graphene Edges for Electroreduction of Nitrogen. ACS Applied Nano Materials, 2022, 5, 11270-11279.	2.4	7
607	Building Hydrogen Bonds on Graphitic Carbon Nitride for Dramatically Enhanced Ammonia Synthesis. SSRN Electronic Journal, 0, , .	0.4	0
608	Zn Single Atom on N-Doped Carbon: Highly Active and Selective Catalyst for Electrochemical Reduction of Nitrate to Ammonia. SSRN Electronic Journal, 0, , .	0.4	0
609	Rational design and modulation strategies of Mo-based electrocatalysts and photo/electrocatalysts towards nitrogen reduction to ammonia (NH3). Chemical Engineering Journal, 2023, 451, 138320.	6.6	29
610	Highâ€Throughput Screening of Bicationic Redox Materials for Chemical Looping Ammonia Synthesis. Advanced Science, 2022, 9, .	5.6	7
611	Co Nanoparticles Decorated Corncob-Derived Biomass Carbon as an Efficient Electrocatalyst for Nitrate Reduction to Ammonia. Inorganic Chemistry, 2022, 61, 14195-14200.	1.9	15
612	MoC nanocrystals confined in N-doped carbon nanosheets toward highly selective electrocatalytic nitric oxide reduction to ammonia. Nano Research, 2022, 15, 8890-8896.	5.8	69
613	Fluid Field Modulation in Mass Transfer for Efficient Photocatalysis. Advanced Science, 2022, 9, .	5.6	28
614	Enhancing electrochemical nitrogen fixation by mimicking π back-donation on laser-tuned Lewis acid sites in noble-metal-molybdenum carbide. Applied Catalysis B: Environmental, 2023, 320, 121777.	10.8	9
615	Singleâ€6tep Synthesis of Feâ^'Fe <sub>3</sub> O <sub>4</sub> Catalyst for Highly Efficient and Selective Electrochemical Nitrogen Reduction. ChemSusChem, 2022, 15, .	3.6	6
616	A checklist for reproducibility in electrochemical nitrogen fixation. Nature Communications, 2022, 13,	5.8	5
617	Interface engineering gives enhanced selectivity in electrochemical nitrogen reduction reaction. Chem Catalysis, 2022, 2, 1841-1843.	2.9	0
618	Rational Design of Atomic Site Catalysts for Electrocatalytic Nitrogen Reduction Reaction: One Step Closer to Optimum Activity and Selectivity. Electrochemical Energy Reviews, 2022, 5, .	13.1	22
619	Power-to-X: A review and perspective. Computers and Chemical Engineering, 2022, 165, 107948.	2.0	34

ARTICLE IF CITATIONS Operando quantification of ammonia produced from computationally-derived transition metal nitride 620 3.1 6 electro-catalysts. Journal of Catalysis, 2022, 413, 956-967. DFT study on the electrochemical synthesis of ammonia over Mo2C(121) with N-doping. Molecular 1.0 Catalysis, 2022, 530, 112637. Prediction of single-boron anchored on MXene catalysts for high-efficient electrocatalytic nitrogen 622 1.0 4 reduction reaction. Molecular Catalysis, 2022, 531, 112658. Synergize curvature and confinement effects for Fe-, Co-, Ni- N2 sites on graphene nanobuds towards eNRR. Molecular Catalysis, 2022, 531, 112656. Recent progress in noble metal electrocatalysts for nitrogen-to-ammonia conversion. Renewable and 624 8.2 14 Sustainable Energy Reviews, 2022, 168, 112845. Ammonia synthesis by electrochemical nitrogen reduction reaction - A novel energy storage way. Journal of Energy Storage, 2022, 55, 105684. Two-dimensional metal-organic frameworks: From synthesis to biomedical, environmental, and energy 626 9.5 22 conversion applications. Coordination Chemistry Reviews, 2022, 473, 214817. <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si7.svg"> <mml:mrow> <mml:mi mathvariant="normal">î" </mml:mi> <mml:mfenced open="(") Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 50 462 Td.(close=")"} <mml: width="0.3333333em" Phase-separated CuAg alloy interfacial stress induced Cu defects for efficient N2 activation and 628 10.8 10 electrocatalytic reduction. Applied Catalysis B: Environmental, 2023, 320, 121915. Multiple roles for LaFeO3 in enhancing the Photoelectrochemical performance of WO3. Journal of 629 Colloid and Interface Science, 2023, 629, 598-609. Tailored electronic structure by sulfur filling oxygen vacancies boosts electrocatalytic nitrogen 630 7 6.6 oxyanions reduction to ammonia. Chemical Engineering Journal, 2023, 451, 138890. Activation of MoS<sub>2</sub> monolayer electrocatalysts <i>via</i> reduction and phase control in molten sodium for selective hydrogenation of nitrogen to ammonia. Chemical Science, 2022, 13, 3.7 9498-9506. Improved nitrogen reduction activity of NbSe<sub>2</sub> tuned by edge chirality. RSC Advances, 632 1.7 0 2022, 12, 22131-22138. Descriptors and graphical construction for<i>in silico</i>design of efficient and selective single 3.7 atom catalysts for the eNRR. Chemical Science, 2022, 13, 10003-10010. Atomically dispersed metal catalysts for the electrochemical nitrogen reduction reaction. Journal of 634 5.215 Materials Chemistry A, 2022, 10, 22331-22353. Electrocatalytic selectivity for nitrogen reduction <i>vs.</i> hydrogen evolution: a comparison of vanadium and cobalt oxynitrides at different pH values. Journal of Materials Chemistry A, 2022, 10, 21401-21415. Highly efficient electrochemical N<sub>2</sub> reduction over strongly coupled 636 CeO<sub>2</sub>–Mo<sub>2</sub>C nanocomposites anchored by reduced graphene oxide. Dalton 1.6 2 Transactions, 0, , . Facet and d-band center engineering of CuNi nanocrystals for efficient nitrate electroreduction to 1.6 ammonia. Dalton Transactions, 2022, 51, 15111-15120.

#	Article	IF	CITATIONS
638	The development of catalysts for electrochemical nitrogen reduction toward ammonia: theoretical and experimental advances. Chemical Communications, 2022, 58, 10290-10302.	2.2	4
639	Oxygen vacancies in Co <sub>3</sub> O <sub>4</sub> nanoarrays promote nitrate electroreduction for ammonia synthesis. Sustainable Energy and Fuels, 2022, 6, 4130-4136.	2.5	81
640	Zn single atom on N-doped carbon: Highly active and selective catalyst for electrochemical reduction of nitrate to ammonia. Chemical Engineering Journal, 2023, 452, 139533.	6.6	18
641	Electroreduction of nitrate to ammonia on atomically-dispersed Cu-N4 active sites with high efficiency and stability. Fuel, 2023, 332, 126106.	3.4	8
642	Sulfur-induced electron redistribution of single molybdenum atoms promotes nitrogen electroreduction to ammonia. Applied Catalysis B: Environmental, 2023, 321, 122038.	10.8	20
643	Assembly of Hydrophobic ZIF-8 on CeO2 Nanorods as High-Efficiency Catalyst for Electrocatalytic Nitrogen Reduction Reaction. Nanomaterials, 2022, 12, 2964.	1.9	5
644	Controlled etching to immobilize highly dispersed Fe in MXene for electrochemical ammonia production. , 2022, 1, 117-125.		11
645	Regulation of the electrocatalytic nitrogen cycle based on sequential proton–electron transfer. Nature Catalysis, 2022, 5, 798-806.	16.1	24
646	Urea Production on Metalâ€Free Dual Silicon Doped C9N4 Nanosheet Under Ambient Conditions by Electrocatalysis: A First Principles Study. ChemPhysChem, 0, , .	1.0	3
647	Current Progress in 2D Metal–Organic Frameworks for Electrocatalysis. Small Structures, 2023, 4, .	6.9	100
648	Achieving Synchronization of Electrochemical Production of Ammonia from Nitrate and Ammonia Capture by Constructing a "Twoâ€nâ€One―Flow Cell Electrolyzer. Advanced Energy Materials, 2022, 12, .	10.2	40
649	Mechanism of C-N bonds formation in electrocatalytic urea production revealed by ab initio molecular dynamics simulation. Nature Communications, 2022, 13, .	5.8	50
650	Recent advances and challenges of electrochemical ammonia synthesis. Chem Catalysis, 2022, 2, 2590-2613.	2.9	39
651	Graphyne supported Co13, Fe13 and Ni13 nano-cluster as efficient electrocatalysts for nitrogen reduction reaction: A first principles study. Catalysis Today, 2023, 423, 113906.	2.2	1
652	Highly efficient electrocatalytic nitrogen fixation enabled by the bridging effect of Ru in plasmonic nanoparticles. Nano Research, 2023, 16, 360-370.	5.8	11
653	Recent Advances of Single-atom Catalysts for Electro-catalysis. Chemical Research in Chinese Universities, 2022, 38, 1146-1150.	1.3	7
654	Bi-Loaded Cu Hollow Microtube Electrodes for N <sub>2</sub> Electroreduction. ACS Applied Energy Materials, 2022, 5, 11152-11158.	2.5	1
655	Oxygen-Vacancy-Rich Cu <sub>2</sub> O Hollow Nanocubes for Nitrate Electroreduction Reaction to Ammonia in a Neutral Electrolyte. Inorganic Chemistry, 2022, 61, 15678-15685.	1.9	17

#	Article	IF	CITATIONS
656	Electrochemical Generation of Catalytically Active Edge Sites in C <sub>2</sub> Nâ€Type Carbon Materials for Artificial Nitrogen Fixation. Small, 2022, 18, .	5.2	8
657	Advancing the Electrochemistry of Gasâ€Involved Reactions through Theoretical Calculations and Simulations from Microscopic to Macroscopic. Advanced Functional Materials, 2022, 32, .	7.8	29
658	Mechanistic analysis of the dissociative reduction of nitrogen to ammonia by ZnMn2O4 catalyst derived from spent batteries. Catalysis Today, 2023, 423, 113898.	2.2	2
659	Recent advances in ammonia synthesis technologies: Toward future zero carbon emissions. International Journal of Hydrogen Energy, 2023, 48, 11237-11273.	3.8	36
660	Recent Advances in Designing Efficient Electrocatalysts for Electrochemical Nitrate Reduction to Ammonia. Small Structures, 2023, 4, .	6.9	32
661	Building hydrogen bonds on graphitic carbon nitride for dramatically enhanced ammonia synthesis. Chemical Engineering Journal, 2023, 452, 139606.	6.6	4
662	High-Efficiency Electrochemical Nitrate Reduction to Ammonia on a Co <sub>3</sub> O <sub>4</sub> Nanoarray Catalyst with Cobalt Vacancies. ACS Applied Materials & Interfaces, 2022, 14, 46595-46602.	4.0	62
663	Membrane-modified electrocatalysts for nitrate reduction to ammonia with high faradaic efficiency. Journal of Materials Chemistry A, 2022, 10, 22428-22436.	5.2	8
664	Mechanistic understanding of the effect of alloying Au with Ni on N <sub>2</sub> electroreduction into NH <sub>3</sub> : theoretical considerations. New Journal of Chemistry, 2022, 46, 21911-21920.	1.4	1
665	Transition metal single atom embedded GaN monolayer surface for efficient and selective CO <sub>2</sub> electroreduction. Journal of Materials Chemistry A, 2022, 10, 24280-24289.	5.2	5
666	Mixture screening strategy of efficient transition metal heteronuclear dual-atom electrocatalysts toward nitrogen fixation. Physical Chemistry Chemical Physics, 2022, 24, 26776-26784.	1.3	6
667	Role of the Membrane Transport Mechanism in Electrochemical Nitrogen Reduction Experiments. Membranes, 2022, 12, 969.	1.4	3
668	Directing the Surface Atomic Geometry on Copper Sulfide for Enhanced Electrochemical Nitrogen Reduction. ACS Catalysis, 2022, 12, 13638-13648.	5.5	5
669	<i>In Situ</i> Growth of Fe <sub>2</sub> O <sub>3</sub> Nanorod Arrays on Carbon Cloth with Rapid Charge Transfer for Efficient Nitrate Electroreduction to Ammonia. ACS Applied Materials & Interfaces, 2022, 14, 49765-49773.	4.0	21
670	Recent progress of iron-based electrocatalysts for nitrogen reduction reaction. Journal of Materials Science and Technology, 2023, 140, 121-134.	5.6	13
671	In Situ Derived Co <sub>2</sub> B Nanosheet Array: A High-Efficiency Electrocatalyst for Ambient Ammonia Synthesis via Nitrate Reduction. ACS Applied Materials & Interfaces, 2022, 14, 49650-49657.	4.0	19
672	Defect engineering for advanced electrocatalytic conversion of nitrogen-containing molecules. Science China Chemistry, 2023, 66, 1052-1072.	4.2	14
673	Rigorous Assessment of Cl <sup>â^'</sup> â€Based Anolytes on Electrochemical Ammonia Synthesis. Advanced Science, 2022, 9, .	5.6	12

#	Article	IF	CITATIONS
674	Unveiling the Protonation Kineticsâ€Dependent Selectivity in Nitrogen Electroreduction: Achieving 75.05 % Selectivity. Angewandte Chemie, 2022, 134, .	1.6	1
675	Unveiling the Protonation Kineticsâ€Dependent Selectivity in Nitrogen Electroreduction: Achieving 75.05 % Selectivity. Angewandte Chemie - International Edition, 2022, 61, .	7.2	14
676	Engineering Gas–Solid–Liquid Triple-Phase Interfaces for Electrochemical Energy Conversion Reactions. Electrochemical Energy Reviews, 2022, 5, .	13.1	20
677	"MoFe cofactor―inspired iron mesh-based MIL-88A(Fe/Mo) for bionic photocatalytic nitrogen fixation. Molecular Catalysis, 2022, 532, 112730.	1.0	3
678	Self-supported Mo-doped TiO2 electrode for ambient electrocatalytic nitrogen oxidation. Electrochimica Acta, 2022, 435, 141333.	2.6	6
679	Spin regulation for efficient electrocatalytic N2 reduction over diatomic Fe-Mo catalyst. Journal of Colloid and Interface Science, 2023, 630, 215-223.	5.0	17
680	Electron deficient boron-doped amorphous carbon nitride to uphill N2 photo-fixation through π back donation. Applied Catalysis B: Environmental, 2023, 321, 122070.	10.8	25
681	Effect of oxygen coordination on the electrocatalytic nitrogen fixation of a vanadium single-atom catalyst embedded in graphene. New Journal of Chemistry, 2022, 46, 22936-22943.	1.4	5
682	A review on catalysts for electrocatalytic and photocatalytic reduction of N <sub>2</sub> to ammonia. Green Chemistry, 2022, 24, 9003-9026.	4.6	18
683	Co/N-doped carbon nanosphere derived from adenine-based metal organic framework enabled high-efficiency electrocatalytic nitrate reduction to ammonia. Chemical Communications, 0, , .	2.2	12
684	Synergistic effect of diatomic Mo–B site confined in graphene-like C2N enables electrocatalytic nitrogen reduction via novel mechanism. Journal of Chemical Physics, 2022, 157, .	1.2	6
685	Nanoreactor Based on Cyclodextrin for Direct Electrocatalyzed Ammonia Synthesis. ACS Nano, 2022, 16, 18398-18407.	7.3	16
686	Identification of Active Sites for Ammonia Electrosynthesis on Ruthenium. ACS Energy Letters, 2022, 7, 4290-4298.	8.8	12
687	Theoretical Exploration on the Role of Magnetic States to the N <sub>2</sub> Fixation behaviors of 2D Transition Metal Triâ€borides (TMB <sub>3</sub> s). Chemistry - A European Journal, 2023, 29, .	1.7	3
688	Atomically dispersed bimetallic Fe–Co electrocatalysts for green production of ammonia. Nature Sustainability, 2023, 6, 169-179.	11.5	30
689	Synergy of Substrate Chemical Environments and Single-Atom Catalysts Promotes Catalytic Performance: Nitrogen Reduction on Chiral and Defected Carbon Nanotubes. ACS Applied Materials & Interfaces, 2022, 14, 52544-52552.	4.0	3
690	Atomistic origin of mechanochemical NH3 synthesis on Fe catalysts. International Journal of Hydrogen Energy, 2023, 48, 3931-3941.	3.8	5
691	Progress of Heterogeneous Iridium-Based Water Oxidation Catalysts. ACS Nano, 2022, 16, 17761-17777.	7.3	29

#	Article	IF	CITATIONS
692	Theory-guided electrocatalyst engineering: From mechanism analysis to structural design. Chinese Journal of Catalysis, 2022, 43, 2987-3018.	6.9	45
693	Single-layer MoS2 with adjacent Mo sites for efficient electrocatalytic nitrogen fixation via spin-delocalized electrons effect. Applied Catalysis B: Environmental, 2023, 323, 122186.	10.8	5
694	Electrochemical nitrogen reduction reaction over gallium – a computational and experimental study. Faraday Discussions, 0, 243, 307-320.	1.6	1
695	Excluding false positives: A perspective toward credible ammonia quantification in nitrogen reduction reaction. Chinese Journal of Catalysis, 2023, 44, 50-66.	6.9	9
696	Near-unity electrochemical conversion of nitrate to ammonia on crystalline nickel porphyrin-based covalent organic frameworks. Energy and Environmental Science, 2023, 16, 201-209.	15.6	32
697	Metallene-related materials for electrocatalysis and energy conversion. Materials Horizons, 2023, 10, 407-431.	6.4	13
698	Efficient carrier transfer induced by Au nanoparticles for photoelectrochemical nitrogen reduction. Sustainable Energy and Fuels, 2023, 7, 883-889.	2.5	2
699	Catalytic active centers beyond transition metals: atomically dispersed alkaline-earth metals for the electroreduction of nitrate to ammonia. Journal of Materials Chemistry A, 2023, 11, 1817-1828.	5.2	51
700	Implantation of iron into copper: an effective strategy for facilitating electrocatalytic nitrogen reduction reaction. Materials Today Energy, 2023, 31, 101215.	2.5	6
701	When nitrogen reduction meets single-atom catalysts. Progress in Materials Science, 2023, 132, 101044.	16.0	14
702	Accelerating the reaction kinetics from nitrate to ammonia by anion substitution in NiCo-based catalysts. Journal of Environmental Chemical Engineering, 2023, 11, 109117.	3.3	3
702 703		3.3 9.5	3 54
	catalysts. Journal of Environmental Chemical Engineering, 2023, 11, 109117. Recent progress in electrocatalytic nitrogen reduction to ammonia (NRR). Coordination Chemistry		
703	catalysts. Journal of Environmental Chemical Engineering, 2023, 11, 109117. Recent progress in electrocatalytic nitrogen reduction to ammonia (NRR). Coordination Chemistry Reviews, 2023, 478, 214981. Highly distributed amorphous copper catalyst for efficient ammonia electrosynthesis from nitrate.	9.5	54
703 704	<ul> <li>catalysts. Journal of Environmental Chemical Engineering, 2023, 11, 109117.</li> <li>Recent progress in electrocatalytic nitrogen reduction to ammonia (NRR). Coordination Chemistry Reviews, 2023, 478, 214981.</li> <li>Highly distributed amorphous copper catalyst for efficient ammonia electrosynthesis from nitrate. Journal of Hazardous Materials, 2023, 445, 130651.</li> <li>Microfluidic platform serves as controllable fabrication of binary Mo/Ir nanodots/carbon</li> </ul>	9.5 6.5	54 9
703 704 705	<ul> <li>catalysts. Journal of Environmental Chemical Engineering, 2023, 11, 109117.</li> <li>Recent progress in electrocatalytic nitrogen reduction to ammonia (NRR). Coordination Chemistry Reviews, 2023, 478, 214981.</li> <li>Highly distributed amorphous copper catalyst for efficient ammonia electrosynthesis from nitrate. Journal of Hazardous Materials, 2023, 445, 130651.</li> <li>Microfluidic platform serves as controllable fabrication of binary Mo/Ir nanodots/carbon hetero-material for efficient electrocatalytic nitrogen reduction. Particuology, 2023, 79, 1-9.</li> <li>Selective Electrochemical Urea Synthesis from Nitrate and CO<sub>2</sub> Using <i>In Situ</i> Ru Anchoring onto a Three-Dimensional Copper Electrode. ACS Sustainable Chemistry and Engineering,</li> </ul>	9.5 6.5 2.0	54 9 3
703 704 705 706	<ul> <li>catalysts. Journal of Environmental Chemical Engineering, 2023, 11, 109117.</li> <li>Recent progress in electrocatalytic nitrogen reduction to ammonia (NRR). Coordination Chemistry Reviews, 2023, 478, 214981.</li> <li>Highly distributed amorphous copper catalyst for efficient ammonia electrosynthesis from nitrate. Journal of Hazardous Materials, 2023, 445, 130651.</li> <li>Microfluidic platform serves as controllable fabrication of binary Mo/Ir nanodots/carbon hetero-material for efficient electrocatalytic nitrogen reduction. Particuology, 2023, 79, 1-9.</li> <li>Selective Electrochemical Urea Synthesis from Nitrate and CO<sub>2</sub> Using <i>In Situ</i> Ru Anchoring onto a Three-Dimensional Copper Electrode. ACS Sustainable Chemistry and Engineering, 2022, 10, 15869-15875.</li> <li>Efficient catalyst screening using graph neural networks to predict strain effects on adsorption</li> </ul>	9.5 6.5 2.0 3.2	54 9 3 18

#	Article	IF	Citations
710	Single transition metal atom anchored on g-C3N4 as an electrocatalyst for nitrogen fixation: A computational study. International Journal of Hydrogen Energy, 2023, 48, 7621-7631.	3.8	7
711	Design of ammonia oxidation electrocatalysts for efficient direct ammonia fuel cells. EnergyChem, 2023, 5, 100093.	10.1	6
712	Theoretical insights into dissociative-associative mechanism for enhanced electrochemical nitrate reduction to ammonia. Journal of Hazardous Materials, 2023, 446, 130679.	6.5	12
713	Boosting Nitrogen Activation <i>via</i> Ag Nanoneedle Arrays for Efficient Ammonia Synthesis. ACS Nano, 2023, 17, 411-420.	7.3	11
714	Toward Sabatier Optimal for Ammonia Synthesis with Paramagnetic Phase of Ferromagnetic Transition Metal Catalysts. Journal of the American Chemical Society, 2022, 144, 23089-23095.	6.6	26
715	Singleâ€entity Electrochemistry Unveils Dynamic Transformation during Tandem Catalysis of Cu <sub>2</sub> 0 and Co <sub>3</sub> 0 <sub>4</sub> for Converting NO <sub>3</sub> <sup>â^'</sup> to NH <sub>3</sub> . Angewandte Chemie - International Edition, 2023, 62, .	7.2	25
716	Recent Progress in Electrochemical Nitrogen Reduction on Transition Metal Nitrides. ChemSusChem, 2023, 16, .	3.6	9
717	AutoMat: Automated materials discovery for electrochemical systems. MRS Bulletin, 0, , .	1.7	1
718	Mechanochemical-tuning size dependence of iridium single atom and nanocluster toward highly selective ammonium production. Chem Catalysis, 2023, 3, 100477.	2.9	5
719	Singleâ€entity Electrochemistry Unveils Dynamic Transformation during Tandem Catalysis of Cu2O and Co3O4 for Converting NO3â°' to NH3. Angewandte Chemie, 0, , .	1.6	0
720	Skeletal Nanostructures Promoting Electrocatalytic Reactions with Three-Dimensional Frameworks. ACS Catalysis, 2023, 13, 355-374.	5.5	10
721	Sustainable Nitrogen Fixation to Produce Ammonia by Electroreduction of Plasma-Generated Nitrite. ACS Sustainable Chemistry and Engineering, 2023, 11, 1168-1177.	3.2	7
722	Selective Electrochemical Conversion of N <sub>2</sub> to NH <sub>3</sub> in Neutral Media Using B, N-Containing Carbon with a Nanotubular Morphology. ACS Applied Materials & Interfaces, 2023, 15, 4033-4043.	4.0	7
723	Hierarchical Nanospheres with Polycrystalline Ir&Cu and Amorphous Cu <sub>2</sub> O toward Energyâ€Efficient Nitrate Electrolysis to Ammonia. Small, 2023, 19, .	5.2	15
724	Long distance bimetallic site in crystal with relay metal-N-N-metal mechanism and new descriptors for electrocatalytic nitrogen reduction reaction. Applied Catalysis A: General, 2023, 652, 119030.	2.2	5
725	Rational design of Mo2C nanosheets anchored on hierarchically porous carbon for boosting electrocatalytic N2 reduction to NH3. Materials Today Energy, 2023, 32, 101240.	2.5	6
726	Mechanistic Understanding of the Electrocatalytic Nitrate Reduction Activity of Double-Atom Catalysts. Journal of Physical Chemistry C, 2023, 127, 994-1005.	1.5	7
727	Decoupling Electron―and Phaseâ€Transfer Processes to Enhance Electrochemical Nitrateâ€toâ€Ammonia Conversion by Blending Hydrophobic PTFE Nanoparticles within the Electrocatalyst Layer. Advanced Energy Materials, 2023, 13, .	10.2	7

#	Article	IF	CITATIONS
728	Ammonia Production Using Bacteria and Yeast toward a Sustainable Society. Bioengineering, 2023, 10, 82.	1.6	7
729	Light Fieldâ€Enhanced Singleâ€Site Cu Electrocatalyst for Nitrogen Fixation. Small, 2023, 19, .	5.2	6
730	Highly active iron phosphide catalysts for selective electrochemical nitrate reduction to ammonia. Journal of Environmental Chemical Engineering, 2023, 11, 109275.	3.3	9
731	A practical FeP nanoarrays electrocatalyst for efficient catalytic reduction of nitrite ions in wastewater to ammonia. Applied Catalysis B: Environmental, 2023, 325, 122353.	10.8	31
732	MoS2 Nanotubes for Boosting Electrocatalytic Performance of Nitrogen to Ammonia. Materials Letters, 2022, , 133787.	1.3	0
733	High-Index Surface Structure Engineering of Au–Pd Concave Triple-Octahedrons for Boosting Electrocatalytic Nitrate Reduction to Ammonia. ACS Sustainable Chemistry and Engineering, 2023, 11, 1631-1637.	3.2	8
734	Free radicals promote electrocatalytic nitrogen oxidation. Chemical Science, 2023, 14, 1878-1884.	3.7	5
735	Advances in ambient selective electrohydrogenation of nitrogen to ammonia: strategies to strengthen nitrogen chemisorption. Journal of Materials Chemistry A, 2023, 11, 3871-3887.	5.2	4
736	Two-Dimensional Ordered Double-Transition Metal Carbides for the Electrochemical Nitrogen Reduction Reaction. ACS Applied Materials & amp; Interfaces, 2023, 15, 6797-6806.	4.0	14
737	pâ€d Orbital Hybridization Engineered Singleâ€Atom Catalyst for Electrocatalytic Ammonia Synthesis. Energy and Environmental Materials, 0, , .	7.3	7
738	Cobaloximes: selective nitrite reduction catalysts for tandem ammonia synthesis. Energy and Environmental Science, 2023, 16, 1590-1596.	15.6	16
739	Boosting Electroreduction Kinetics of Nitrogen to Ammonia via Atomically Dispersed Sn Protuberance. Angewandte Chemie, 0, , .	1.6	0
740	Complementary Design in Multicomponent Electrocatalysts for Electrochemical Nitrogen Reduction: Beyond the Leverage in Activity and Selectivity. Angewandte Chemie, 0, , .	1.6	0
741	MoO2/Mo heterostructures for hydrogen evolution reaction and ammonia sensing in self-powered mode. Nano Energy, 2023, 109, 108253.	8.2	18
742	Highly efficient electrochemical ammonia synthesis using superhydrophobic nanoporous silver. Inorganic Chemistry Frontiers, 2023, 10, 2978-2986.	3.0	3
743	Environmental and economic potential of decentralised electrocatalytic ammonia synthesis powered by solar energy. Energy and Environmental Science, 2023, 16, 3314-3330.	15.6	5
744	Activating dual atomic electrocatalysts for the nitric oxide reduction reaction through the P/S element. Materials Horizons, 2023, 10, 2160-2168.	6.4	8
745	Coupling Cu doping and oxygen vacancies in Co <sub>3</sub> O <sub>4</sub> for efficient electrochemical nitrate conversion to ammonia. Chemical Communications, 2023, 59, 5086-5089.	2.2	11

ARTICLE IF CITATIONS # Promoting ambient ammonia electrosynthesis on modulated  $Cu < sup > (i)^{i} / (i) + (sup > catalysts by$ 746 5.2 5 B-doping. Journal of Materials Chemistry A, 2023, 11, 5520-5526. Artificial Leaf for Solarâ€Driven Ammonia Conversion at Milligramâ€Scale Using Triple Junction IIIâ€V 747 5.6 Photoelectrode. Advanced Science, 2023, 10, . Pulsed Nitrate-to-Ammonia Electroreduction Facilitated by Tandem Catalysis of Nitrite Intermediates. 748 6.6 62 Journal of the American Chemical Society, 2023, 145, 6471-6479. Computational screening of I‡3 borophene based single-atom catalysts for N2 reduction. Catalysis 749 Today, 2023, 418, 114079. Critical aspects in the reliable assessment of the activity data for electrocatalytic materials. Current 750 2.5 3 Opinion in Electrochemistry, 2023, 39, 101266. Co-N bond promotes the H\* pathway for the electrocatalytic reduction of nitrate (NO3RR) to ammonia. Journal of Environmental Chemical Engineering, 2023, 11, 109718. 3.3  $\hat{A}$ ·H effectively enhance electrocatalytic nitrogen fixation. Journal of Colloid and Interface Science, 752 5.0 0 2023, 640, 619-625. Plasmonic Au nanoparticles anchored 2D WS2@RGO for high-performance photoelectrochemical 6.6 nitrogen reduction to ammonia. Chemical Engineering Journal, 2023, 465, 143040. Synergistic double-atom catalysts of metal-boron anchored on g-C2N for electrochemical nitrogen reduction: Mechanistic insight and catalyst screening. Journal of Energy Chemistry, 2023, 80, 350-360. 754 13 7.1 Single-Atom Iridium-Based Catalysts: Synthesis Strategies and Electro(Photo)-Catalytic Applications for Renewable Energy Conversion and Storage. Coordination Chemistry Reviews, 2023, 486, 215143. Two-dimensional conductive covalent organic framework for efficient electrocatalytic nitrogen 756 2 1.6 reduction reaction. Vacuum, 2023, 210, 111852. Recent progress in Pd based electrocatalysts for electrochemical nitrogen reduction to ammonia. Journal of Electroanalytical Chemistry, 2023, 931, 117174. Complementary Design in Multicomponent Electrocatalysts for Electrochemical Nitrogen Reduction: 758 7.2 20 Beyond the Leverage in Activity and Selectivity. Angewandte Chemie - International Edition, 2023, 62, . Electrocatalytic nitrogen fixation performance of two-dimensional Metal-Organic Frameworks Cu3(C6O6) and TM/Cu3(C6O6) from first-principle study. Chemical Physics, 2023, 568, 111837. Near ambient N2 fixation on solid electrodes versus enzymes and homogeneous catalysts. Nature 760 13.8 15 Reviews Chemistry, 2023, 7, 184-201. TiO<sub>2</sub>/CeO<sub>2</sub> Frame with Enriched Oxygen Vacancies and Heteroâ€Interfaces for 1.8 Efficient Electrochemical N<sub>2</sub> Reduction. ChemCatChem, 2023, 15, . Boosting Electroreduction Kinetics of Nitrogen to Ammonia via Atomically Dispersed Sn 762 7.2 8 Protuberance. Angewandte Chemie - International Edition, 2023, 62, . Pulsed Electrocatalysis Enabling High Overall Nitrogen Fixation Performance for Atomically Dispersed Fe on TiÓ<sub>2</sub>. Angewandte Chemie, 2023, 135, .

#	Article	IF	CITATIONS
764	Dynamic Reconstitution Between Copper Single Atoms and Clusters for Electrocatalytic Urea Synthesis. Advanced Materials, 2023, 35, .	11.1	66
765	Pulsed Electrocatalysis Enabling High Overall Nitrogen Fixation Performance for Atomically Dispersed Fe on TiO <sub>2</sub> . Angewandte Chemie - International Edition, 2023, 62, .	7.2	14
766	Selective NO <sub><i>x</i></sub> <sup>–</sup> Electroreduction to Ammonia on Isolated Ru Sites. ACS Nano, 2023, 17, 3483-3491.	7.3	20
767	Comprehensive understanding and rational regulation of microenvironment for gasâ€involving electrochemical reactions. , 2023, 5, .		4
768	Promoted photocatalytic hydrogen evolution via double-electron migration in Ag@g-C3N4 heterojunction. International Journal of Hydrogen Energy, 2023, 48, 17370-17382.	3.8	2
769	Electrocatalytic Reduction of Nitrate to Ammonia via a Au/Cu Single Atom Alloy Catalyst. Environmental Science & Technology, 2023, 57, 3134-3144.	4.6	30
770	Visualizing the reaction interface of lithium-mediated nitrogen fixation. Joule, 2023, 7, 253-256.	11.7	4
771	Composition Engineering Opens an Avenue Toward Efficient and Sustainable Nitrogen Fixation. Energy and Environmental Materials, 2024, 7, .	7.3	5
772	Continuous-flow electrosynthesis of ammonia by nitrogen reduction and hydrogen oxidation. Science, 2023, 379, 707-712.	6.0	107
773	The important role of surface charge on a new mechanism of nitrogen reduction. Physical Chemistry Chemical Physics, 2023, 25, 7986-7993.	1.3	1
774	Electrochemical C–N coupling of CO <sub>2</sub> and nitrogenous small molecules for the electrosynthesis of organonitrogen compounds. Chemical Society Reviews, 2023, 52, 2193-2237.	18.7	47
775	Paradox of thiourea: A false-positive and promoter for electrochemical nitrogen reduction on nickel sulfide catalysts. Applied Catalysis B: Environmental, 2023, 328, 122485.	10.8	5
776	Understanding the role of Ce sites for boosting PEC-NIRR without externally applied potentials. Inorganic Chemistry Frontiers, 2023, 10, 2060-2066.	3.0	4
777	Defective Metal Oxides: Lessons from CO <sub>2</sub> RR and Applications in NO <i><sub>x</sub></i> RR. Advanced Materials, 2023, 35, .	11.1	16
778	Electrodriven Chemical Looping Ammonia Synthesis Mediated by Lithium Imide. ACS Energy Letters, 2023, 8, 1567-1574.	8.8	8
779	Hydrogen-assisted activation of N2 molecules on atomic steps of ZnSe nanorods. Nano Research, 2023, 16, 6721-6727.	5.8	3
780	The state-of-the-art in the electroreduction of NO <sub><i>x</i></sub> for the production of ammonia in aqueous and nonaqueous media at ambient conditions: a review. New Journal of Chemistry, 2023, 47, 6018-6040.	1.4	5
781	Prospect of Ru(edta) complexes in nitrogen cycle electrocatalysis: a mini review. Inorganic Chemistry Frontiers, 2023, 10, 1958-1964.	3.0	4

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#	Article	IF	CITATIONS
782	Reliable reporting of Faradaic efficiencies for electrocatalysis research. Nature Communications, 2023, 14, .	5.8	18
783	Molybdenum based 2D conductive Metal–Organic frameworks as efficient single-atom electrocatalysts for N2 reduction: A density functional theory study. International Journal of Hydrogen Energy, 2023, 48, 19972-19983.	3.8	8
784	Fluorine‣tabilized Defective Black Phosphorene as a Lithiumâ€Like Catalyst for Boosting Nitrogen Electroreduction to Ammonia. Angewandte Chemie - International Edition, 2023, 62, .	7.2	12
785	Fluorineâ€Stabilized Defective Black Phosphorene as a Lithiumâ€Like Catalyst for Boosting Nitrogen Electroreduction to Ammonia. Angewandte Chemie, 2023, 135, .	1.6	1
786	Porphyrin-Based Covalent Organic Frameworks Anchoring Au Single Atoms for Photocatalytic Nitrogen Fixation. Journal of the American Chemical Society, 2023, 145, 6057-6066.	6.6	63
787	Highâ€Throughput Screening of Electrocatalysts for Nitrogen Reduction Reactions Accelerated by Interpretable Intrinsic Descriptor. Angewandte Chemie - International Edition, 2023, 62, .	7.2	16
788	Highâ€Throughput Screening of Electrocatalysts for Nitrogen Reduction Reactions Accelerated by Interpretable Intrinsic Descriptor. Angewandte Chemie, 2023, 135, .	1.6	0
789	Electrochemical Reduction of Nitrates on CoO Nanoclustersâ€Functionalized Graphene with Highest Mass Activity and Nearly 100% Selectivity to Ammonia. Advanced Energy Materials, 2023, 13, .	10.2	22
790	Photoelectrochemical N <sub>2</sub> â€ŧoâ€NH <sub>3</sub> Fixation with High Efficiency and Rates via Optimized Siâ€Based System at Positive Potential versus Li <sup>0/+</sup> . Advanced Materials, 2023, 35, .	11.1	13
791	Electrocatalytically Activating and Reducing N <sub>2</sub> Molecule by Tuning Activity of Local Hydrogen Radical. Angewandte Chemie - International Edition, 2023, 62, .	7.2	10
792	Electrocatalytically Activating and Reducing N <sub>2</sub> Molecule by Tuning Activity of Local Hydrogen Radical. Angewandte Chemie, 2023, 135, .	1.6	0
793	Hydrophobic Nanoporous Silver with ZIF Encapsulation for Nitrogen Reduction Electrocatalysis. Molecules, 2023, 28, 2781.	1.7	2
794	Accelerating ammonia synthesis in a membraneless flow electrolyzer through coupling ambient dinitrogen oxidation and water splitting. IScience, 2023, 26, 106407.	1.9	1
795	Efficient Electroreduction of Nitrate to Ammonia with CuPd Nanoalloy Catalysts. ChemSusChem, 2023, 16, .	3.6	2
796	Promoting nitrate electroreduction to ammonia over A-site deficient cobalt-based perovskite oxides. Journal of Materials Chemistry A, 0, , .	5.2	0
797	Building up a general selection strategy and catalytic performance prediction expressions of heteronuclear double-atom catalysts for N2 reduction. Journal of Energy Chemistry, 2023, 82, 375-386.	7.1	30
798	Elaborately tuning the electronic structure of single-atom nickel sites using nickel nanoparticles to markedly enhance the electrochemical reduction of nitrate into ammonia. Journal of Energy Chemistry, 2023, 83, 32-42.	7.1	11
799	Oxideâ€Derived Bismuth as an Efficient Catalyst for Electrochemical Reduction of Flue Gas. Small, 2023, 19, .	5.2	7

#	Article	IF	CITATIONS
800	Reversible transition of an amorphous Cu-Al oxyfluoride into a highly active electrocatalyst for NO3â^² reduction to NH3. Chem Catalysis, 2023, 3, 100595.	2.9	1
801	Active site recovery and N-N bond breakage during hydrazine oxidation boosting the electrochemical hydrogen production. Nature Communications, 2023, 14, .	5.8	21
802	Selective nitric oxide electroreduction at monodispersed transition-metal sites with atomically precise coordination environment. Chem Catalysis, 2023, 3, 100598.	2.9	2
803	The role of machine learning in carbon neutrality: Catalyst property prediction, design, and synthesis for carbon dioxide reduction. EScience, 2023, 3, 100136.	25.0	5
804	Electrical Pulseâ€Driven Periodic Selfâ€Repair of Cuâ€Ni Tandem Catalyst for Efficient Ammonia Synthesis from Nitrate. Angewandte Chemie, 2023, 135, .	1.6	3
805	Exploring the origin of the high electro-catalytic activity for nitrate-to-ammonia conversion on electrodeposited Ni/Ru hydroxide hybrids. Inorganic Chemistry Frontiers, 2023, 10, 3058-3064.	3.0	1
806	Electrical Pulseâ€Driven Periodic Selfâ€Repair of Cuâ€Ni Tandem Catalyst for Efficient Ammonia Synthesis from Nitrate. Angewandte Chemie - International Edition, 2023, 62, .	7.2	29
807	Selective Electrocatalytic Nitrate Reduction to Ammonia Using Nafion-Covered Cu Electrodeposits. Journal of Physical Chemistry C, 2023, 127, 8054-8061.	1.5	2
808	Eine bioâ€inspirierte aerobâ€hydrophobe Janusâ€Schnittstelle auf teilweise karbonisierten Eisenheterostrukturen fördert die bifunktionale Stickstofffixierung. Angewandte Chemie, 2023, 135, .	1.6	1
809	Single-Atom Anchored g-C3N4 Monolayer as Efficient Catalysts for Nitrogen Reduction Reaction. Nanomaterials, 2023, 13, 1433.	1.9	1
810	Bioâ€Inspired Aerobicâ€Hydrophobic Janus Interface on Partially Carbonized Iron Heterostructure Promotes Bifunctional Nitrogen Fixation. Angewandte Chemie - International Edition, 2023, 62, .	7.2	12
811	Halogen-induced planar defects in Cu catalysts for ammonia electrosynthesis at an ampere-level current density. Materials Chemistry Frontiers, 2023, 7, 3093-3101.	3.2	3
812	Achieving volatile potassium promoted ammonia synthesis via mechanochemistry. Nature Communications, 2023, 14, .	5.8	5
825	Understanding the complexity in bridging thermal and electrocatalytic methanation of CO <sub>2</sub> . Chemical Society Reviews, 2023, 52, 3627-3662.	18.7	15
850	Heterojunction Engineering for Electrocatalytic Applications. ACS Applied Energy Materials, 2023, 6, 7737-7784.	2.5	5
852	Co <sub>3</sub> O <sub>4</sub> nanoparticles embedded in porous carbon nanofibers enable efficient nitrate reduction to ammonia. Chemical Communications, 2023, 59, 8973-8976.	2.2	6
863	Recent advances in electrocatalytic NO <sub><i>x</i></sub> reduction into ammonia. , 2023, 1, 645-664.		2
873	Recent developments in Ti-based nanocatalysts for electrochemical nitrate-to-ammonia conversion. Inorganic Chemistry Frontiers, 2023, 10, 4901-4917.	3.0	4

#	Article	IF	CITATIONS
878	Metal–metalloid alloys: mesoporous Rh–Te films for electrocatalytic nitrogen fixation. Journal of Materials Chemistry A, 0, , .	5.2	0
890	3D cauliflower-like Ni foam: a high-efficiency electrocatalyst for ammonia production <i>via</i> nitrite reduction. Chemical Communications, 2023, 59, 10805-10808.	2.2	3
891	Pathways of the Electrochemical Nitrogen Reduction Reaction: From Ammonia Synthesis to Metal-N2 Batteries. Electrochemical Energy Reviews, 2023, 6, .	13.1	9
900	Recent advances of metal oxide catalysts for electrochemical NH <sub>3</sub> production from nitrogen-containing sources. Inorganic Chemistry Frontiers, 2023, 10, 5812-5838.	3.0	3
901	Nanoengineering Metal–Organic Frameworks and Derivatives for Electrosynthesis of Ammonia. Nano-Micro Letters, 2023, 15, .	14.4	3
913	Electrocatalytic upcycling of nitrogenous wastes into green ammonia: advances and perspectives on materials innovation. , 2023, 2, .		8
914	A perspective on the future of electrochemical ammonia synthesis: aqueous or non-aqueous?. Journal of Materials Chemistry A, 2023, 11, 22132-22146.	5.2	0
915	Investigating the role of oxygen vacancies in metal oxide for enhanced electrochemical reduction of NO <sub>3</sub> <sup>â^'</sup> to NH <sub>3</sub> : mechanistic insights. Inorganic Chemistry Frontiers, 0, , .	3.0	0
916	Paradigm in single-atom electrocatalysts for dinitrogen reduction to ammonia. Materials Chemistry Frontiers, 0, , .	3.2	0
920	Engineering photocatalytic ammonia synthesis. Chemical Society Reviews, 2023, 52, 6938-6956.	18.7	4
942	Abiotic Transformations of Nitrogen mediated by Iron Sulfides and related species from Early Earth to Catalyst Design. Inorganic Chemistry Frontiers, 0, , .	3.0	0
949	Cu doping in FeP enabling efficient electrochemical nitrate reduction to ammonia in neutral media. Chemical Communications, 2023, 59, 13611-13614.	2.2	2
957	Recent advances and challenges of nitrogen/nitrate electro catalytic reduction to ammonia synthesis. Frontiers in Energy, 0, , .	1.2	1
967	Real-time screening of Ni <sub><i>x</i></sub> B <sub><i>y</i></sub> bifunctional electrocatalysts for overall NH <sub>3</sub> synthesis <i>via</i> SG-TC SECM. Materials Horizons, 2024, 11, 1212-1222.	6.4	0
968	Atomic interface regulation of rare-marth metal single atom catalysts for energy conversion. Nano Research, 2024, 17, 3493-3515.	5.8	1
984	Unlocking single-atom catalysts via amorphous substrates. Nano Research, 0, , .	5.8	0
990	High-performance artificial leaf: from electrocatalyst design to solar-to-chemical conversion. Materials Chemistry Frontiers, 2024, 8, 1300-1333.	3.2	0
1022	Cu-based catalysts for electrocatalytic nitrate reduction to ammonia: fundamentals and recent advances. , 0, , .		0

#	Article	IF	CITATIONS
1035	Ceramic-membrane cells for electrocatalytic ammonia synthesis. , 2024, , 65-109.		0