Kuan Chang

List of Publications by Year
in descending order

242 papers	31,462 citations	5430 85 h-index	5244 171 g-index
246 all docs	246 docs citations	246 times ranked	26384 citing authors

#	Article	IF	Citations
1	Beyond fossil fuelâ€“driven nitrogen transformations. Science, 2018, 360, .	6.0	1,379
2	Active sites for CO ₂ hydrogenation to methanol on Cu/ZnO catalysts. Science, 2017, 355, 1296-1299.	6.0	1,180
3	A selective and efficient electrocatalyst for carbon dioxide reduction. Nature Communications, 2014, 5, 3242.	5.8	1,111
4	Review of Pt-Based Bimetallic Catalysis: From Model Surfaces to Supported Catalysts. Chemical Reviews, 2012, 112, 5780-5817.	23.0	1,082
5	Catalytic reduction of CO₂ by H₂ for synthesis of CO, methanol and hydrocarbons: challenges and opportunities. Energy and Environmental Science, 2016, 9, 62-73.	15.6	979
6	Correlating the hydrogen evolution reaction activity in alkaline electrolytes with the hydrogen binding energy on monometallic surfaces. Energy and Environmental Science, 2013, 6, 1509.	15.6	869
7	Recent Advances in Carbon Dioxide Hydrogenation to Methanol via Heterogeneous Catalysis. Chemical Reviews, 2020, 120, 7984-8034.	23.0	825
8	Tuning Selectivity of CO₂ Hydrogenation Reactions at the Metal/Oxide Interface. Journal of the American Chemical Society, 2017, 139, 9739-9754.	6.6	823
9	Correlating hydrogen oxidation and evolution activity on platinum at different pH with measured hydrogen binding energy. Nature Communications, 2015, 6, 5848.	5.8	784
10	Carbide and Nitride Overlayers on Early Transition Metal Surfaces:Â Preparation, Characterization, and Reactivities. Chemical Reviews, 1996, 96, 1477-1498.	23.0	677
11	Surface Chemistry of Transition Metal Carbides. Chemical Reviews, 2005, 105, 185-212.	23.0	677
12	Adsorbate-mediated strong metalâ€“support interactions in oxide-supported Rh catalysts. Nature Chemistry, 2017, 9, 120-127.	6.6	609
13	Optimizing Binding Energies of Key Intermediates for CO₂ Hydrogenation to Methanol over Oxide-Supported Copper. Journal of the American Chemical Society, 2016, 138, 12440-12450.	6.6	565
14	Lowâ€€ost Hydrogenâ€€volution Catalysts Based on Monolayer Platinum on Tungsten Monocarbide Substrates. Angewandte Chemie - International Edition, 2010, 49, 9859-9862.	7.2	499
15	A New Class of Electrocatalysts for Hydrogen Production from Water Electrolysis: Metal Monolayers Supported on Low-Cost Transition Metal Carbides. Journal of the American Chemical Society, 2012, 134, 3025-3033.	6.6	482
16	The Central Role of Bicarbonate in the Electrochemical Reduction of Carbon Dioxide on Gold. Journal of the American Chemical Society, 2017, 139, 3774-3783.	6.6	479
17	Oxygen-Containing Functional Groups on Single-Wall Carbon Nanotubes:â€‰ NEXAFS and Vibrational Spectroscopic Studies. Journal of the American Chemical Society, 2001, 123, 10699-10704.	6.6	478
18	Monolayer bimetallic surfaces: Experimental and theoretical studies of trends in electronic and chemical properties. Surface Science Reports, 2008, 63, 201-254.	3.8	472

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19	Highly porous non-precious bimetallic electrocatalysts for efficient hydrogen evolution. Nature Communications, 2015, 6, 6567.	5.8	440
20	Mechanistic Insights into Electrochemical Nitrogen Reduction Reaction on Vanadium Nitride Nanoparticles. Journal of the American Chemical Society, 2018, 140, 13387-13391.	6.6	438
21	Hydrogenation of CO₂ to Methanol: Importance of Metalâ€"Oxide and Metalâ€"Carbide Interfaces in the Activation of CO₂. ACS Catalysis, 2015, 5, 6696-6706.	5.5	374
22	Metal Carbides as Alternative Electrocatalyst Supports. ACS Catalysis, 2013, 3, 1184-1194.	5.5	358
23	Electrochemical reduction of CO₂to synthesis gas with controlled CO/H₂ratios. Energy and Environmental Science, 2017, 10, 1180-1185.	15.6	341
24	Molybdenum Carbide as Alternative Catalysts to Precious Metals for Highly Selective Reduction of CO₂ to CO. Angewandte Chemie - International Edition, 2014, 53, 6705-6709.	7.2	329
25	Net reduction of CO2 via its thermocatalytic and electrocatalytic transformation reactions in standard and hybrid processes. Nature Catalysis, 2019, 2, 381-386.	16.1	317
26	Using natureâ€™s blueprint to expand catalysis with Earth-abundant metals. Science, 2020, 369, .	6.0	306
27	Trends in the chemical properties of early transition metal carbide surfaces: A density functional study. Catalysis Today, 2005, 105, 66-73.	2.2	302
28	Non-precious metal electrocatalysts with high activity for hydrogen oxidation reaction in alkaline electrolytes. Energy and Environmental Science, 2014, 7, 1719-1724.	15.6	276
29	Selective electroreduction of CO2 to acetone by single copper atoms anchored on N-doped porous carbon. Nature Communications, 2020, 11, 2455.	5.8	265
30	CO₂ Hydrogenation over Oxideâ€Supported PtCo Catalysts: The Role of the Oxide Support in Determining the Product Selectivity. Angewandte Chemie - International Edition, 2016, 55, 7968-7973.	7.2	261
31	Exploring the ternary interactions in Cuâ€"ZnOâ€"ZrO2 catalysts for efficient CO2 hydrogenation to methanol. Nature Communications, 2019, 10, 1166.	5.8	258
32	CO₂ Hydrogenation to Methanol over ZrO₂-Containing Catalysts: Insights into ZrO₂ Induced Synergy. ACS Catalysis, 2019, 9, 7840-7861.	5.5	253
33	CO2 hydrogenation on Pt, Pt/SiO2 and Pt/TiO2: Importance of synergy between Pt and oxide support. Journal of Catalysis, 2016, 343, 115-126.	3.1	250
34	Monolayer platinum supported on tungsten carbides as low-cost electrocatalysts: opportunities and limitations. Energy and Environmental Science, 2011, 4, 3900.	15.6	243
35	Unsaturated edge-anchored Ni single atoms on porous microwave exfoliated graphene oxide for electrochemical CO2. Applied Catalysis B: Environmental, 2019, 243, 294-303.	10.8	243
36	Generating Defectâ€Rich Bismuth for Enhancing the Rate of Nitrogen Electroreduction to Ammonia. Angewandte Chemie - International Edition, 2019, 58, 9464-9469.	7.2	226

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37	Promoting H2O2 production via 2-electron oxygen reduction by coordinating partially oxidized Pd with defect carbon. Nature Communications, 2020, 11, 2178.	5.8	209
38	Electrochemical Conversion of CO₂ to Syngas with Controllable CO/H₂ Ratios over Co and Ni Singleâ€Atom Catalysts. Angewandte Chemie - International Edition, 2020, 59, 3033-3037.	7.2	203
39	Low Pressure CO₂ Hydrogenation to Methanol over Gold Nanoparticles Activated on a CeO_{<i>x</i>}/TiO₂ Interface. Journal of the American Chemical Society, 2015, 137, 10104-10107.	6.6	200
40	Surface science and electrochemical studies of WC and W2C PVD films as potential electrocatalysts. Catalysis Today, 2005, 99, 299-307.	2.2	189
41	Electron Transfer Effects in Ozone Decomposition on Supported Manganese Oxide. Journal of Physical Chemistry B, 2001, 105, 4245-4253.	1.2	179
42	Selective Hydrodeoxygenation of Biomassâ€Derived Oxygenates to Unsaturated Hydrocarbons using Molybdenum Carbide Catalysts. ChemSusChem, 2013, 6, 798-801.	3.6	173
43	Activity and Selectivity Control in CO₂ Electroreduction to Multicarbon Products over CuO_{<i>x</i>} Catalysts via Electrolyte Design. ACS Catalysis, 2018, 8, 10012-10020.	5.5	173
44	Accelerating CO₂ Electroreduction to CO Over Pd Singleâ€Atom Catalyst. Advanced Functional Materials, 2020, 30, 2000407.	7.8	173
45	Trends in the catalytic reduction of CO2 by hydrogen over supported monometallic and bimetallic catalysts. Journal of Catalysis, 2013, 301, 30-37.	3.1	168
46	Comparison of electrochemical stability of transition metal carbides (WC, W2C, Mo2C) over a wide pH range. Journal of Power Sources, 2012, 202, 11-17.	4.0	157
47	Tuning the activity and selectivity of electroreduction of CO2 to synthesis gas using bimetallic catalysts. Nature Communications, 2019, 10, 3724.	5.8	156
48	Platinumâ€"Ruthenium Nanotubes and Platinumâ€"Ruthenium Coated Copper Nanowires As Efficient Catalysts for Electro-Oxidation of Methanol. ACS Catalysis, 2015, 5, 1468-1474.	5.5	155
49	Application of Ceria in CO₂ Conversion Catalysis. ACS Catalysis, 2020, 10, 613-631.	5.5	152
50	Revealing Energetics of Surface Oxygen Redox from Kinetic Fingerprint in Oxygen Electrocatalysis. Journal of the American Chemical Society, 2019, 141, 13803-13811.	6.6	151
51	Computational and experimental demonstrations of one-pot tandem catalysis for electrochemical carbon dioxide reduction to methane. Nature Communications, 2019, 10, 3340.	5.8	150
52	Tungsten Monocarbide as Potential Replacement of Platinum for Methanol Electrooxidation. Journal of Physical Chemistry C, 2007, 111, 14617-14620.	1.5	149
53	Trends in Electrochemical Stability of Transition Metal Carbides and Their Potential Use As Supports for Low-Cost Electrocatalysts. ACS Catalysis, 2014, 4, 1558-1562.	5.5	142
54	<i>In situ</i> hydrogenation and decarboxylation of oleic acid into heptadecane over a Cuâ€"Ni alloy catalyst using methanol as a hydrogen carrier. Green Chemistry, 2018, 20, 197-205.	4.6	142

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55	Metal overlayer on metal carbide substrate: unique bimetallic properties for catalysis and electrocatalysis. Chemical Society Reviews, 2012, 41, 8021.	18.7	137
56	Tuning Ni-catalyzed CO2 hydrogenation selectivity via Ni-ceria support interactions and Ni-Fe bimetallic formation. Applied Catalysis B: Environmental, 2018, 224, 442-450.	10.8	133
57	Shapeâ€Controlled CO₂ Electrochemical Reduction on Nanosized Pd Hydride Cubes and Octahedra. Advanced Energy Materials, 2019, 9, 1802840.	10.2	132
58	Carbon dioxide reduction in tandem with light-alkane dehydrogenation. Nature Reviews Chemistry, 2019, 3, 638-649.	13.8	124
59	Enhancing Activity and Reducing Cost for Electrochemical Reduction of CO₂ by Supporting Palladium on Metal Carbides. Angewandte Chemie - International Edition, 2019, 58, 6271-6275.	7.2	123
60	Identifying trends and descriptors for selective CO₂ conversion to CO over transition metal carbides. Chemical Communications, 2015, 51, 6988-6991.	2.2	122
61	Review of Plasma-Assisted Catalysis for Selective Generation of Oxygenates from CO₂ and CH₄. ACS Catalysis, 2020, 10, 2855-2871.	5.5	118
62	Reducing Iridium Loading in Oxygen Evolution Reaction Electrocatalysts Using Coreâ€"Shell Particles with Nitride Cores. ACS Catalysis, 2018, 8, 2615-2621.	5.5	117
63	Reforming and oxidative dehydrogenation of ethane with CO2 as a soft oxidant over bimetallic catalysts. Journal of Catalysis, 2016, 343, 168-177.	3.1	115
64	Tuning CO2 hydrogenation selectivity via metal-oxide interfacial sites. Journal of Catalysis, 2019, 374, 60-71.	3.1	115
65	Effect of surface carbon on the hydrogen evolution reactivity of tungsten carbide (WC) and Pt-modified WC electrocatalysts. International Journal of Hydrogen Energy, 2012, 37, 3019-3024.	3.8	114
66	Combining CO2 reduction with propane oxidative dehydrogenation over bimetallic catalysts. Nature Communications, 2018, 9, 1398.	5.8	113
67	Atomic layer deposition synthesis of platinumâ€"tungsten carbide coreâ€"shell catalysts for the hydrogen evolution reaction. Chemical Communications, 2012, 48, 1063-1065.	2.2	111
68	Hydrogenation of CO2 to methanol over CuCeTiO catalysts. Applied Catalysis B: Environmental, 2017, 206, 704-711.	10.8	109
69	Molybdenum Carbide as a Highly Selective Deoxygenation Catalyst for Converting Furfural to 2â€Methylfuran. ChemSusChem, 2014, 7, 2146-2149.	3.6	105
70	Active sites for tandem reactions of CO ₂ reduction and ethane dehydrogenation. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 8278-8283.	3.3	105
71	Dry Reforming of Ethane and Butane with CO₂ over PtNi/CeO₂ Bimetallic Catalysts. ACS Catalysis, 2016, 6, 7283-7292.	5.5	103
72	Density functional theory studies of transition metal carbides and nitrides as electrocatalysts. Chemical Society Reviews, 2021, 50, 12338-12376.	18.7	103

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73	SO₂-Induced Selectivity Change in CO₂ Electroreduction. Journal of the American Chemical Society, 2019, 141, 9902-9909.	6.6	102
74	Oxygen induced promotion of electrochemical reduction of CO2 via co-electrolysis. Nature Communications, 2020, 11, 3844.	5.8	102
75	Transition Metal Nitrides as Promising Catalyst Supports for Tuning CO/H₂Syngas Production from Electrochemical CO₂Reduction. Angewandte Chemie - International Edition, 2020, 59, 11345-11348.	7.2	100
76	Ordered mesoporous nickel cobaltite spinel with ultra-high supercapacitance. Journal of Materials Chemistry A, 2013, 1, 2331.	5.2	99
77	Identifying Different Types of Catalysts for CO₂ Reduction by Ethane through Dry Reforming and Oxidative Dehydrogenation. Angewandte Chemie - International Edition, 2015, 54, 15501-15505.	7.2	99
78	Cyclic voltammetry and X-ray photoelectron spectroscopy studies of electrochemical stability of clean and Pt-modified tungsten and molybdenum carbide (WC and Mo2C) electrocatalysts. Journal of Power Sources, 2009, 193, 501-506.	4.0	97
79	Correlating extent of Ptâ€“Ni bond formation with low-temperature hydrogenation of benzene and 1,3-butadiene over supported Pt/Ni bimetallic catalysts. Journal of Catalysis, 2010, 271, 239-250.	3.1	95
80	Atomic Layer Deposition of Pt on Tungsten Monocarbide (WC) for the Oxygen Reduction Reaction. Journal of Physical Chemistry C, 2011, 115, 3709-3715.	1.5	94
81	Opportunities and Challenges in Utilizing Metal-Modified Transition Metal Carbides as Low-Cost Electrocatalysts. Joule, 2017, 1, 253-263.	11.7	94
82	Challenges and Opportunities in Utilizing MXenes of Carbides and Nitrides as Electrocatalysts. Advanced Energy Materials, 2021, 11, 2002967.	10.2	94
83	Monolayer palladium supported on molybdenum and tungsten carbide substrates as low-cost hydrogen evolution reaction (HER) electrocatalysts. International Journal of Hydrogen Energy, 2013, 38, 5638-5644.	3.8	92
84	Ordered Mesoporous Metal Carbides with Enhanced Anisole Hydrodeoxygenation Selectivity. ACS Catalysis, 2016, 6, 3506-3514.	5.5	91
85	Effectively Increased Efficiency for Electroreduction of Carbon Monoxide Using Supported Polycrystalline Copper Powder Electrocatalysts. ACS Catalysis, 2019, 9, 4709-4718.	5.5	91
86	Reactions of oxygen-containing molecules on transition metal carbides: Surface science insight into potential applications in catalysis and electrocatalysis. Surface Science Reports, 2012, 67, 201-232.	3.8	86
87	Quantification of Active Sites and Elucidation of the Reaction Mechanism of the Electrochemical Nitrogen Reduction Reaction on Vanadium Nitride. Angewandte Chemie - International Edition, 2019, 58, 13768-13772.	7.2	86
88	Identifying Surface Reaction Intermediates in Plasma Catalytic Ammonia Synthesis. ACS Catalysis, 2020, 10, 14763-14774.	5.5	86
89	Reactions of water and C1 molecules on carbide and metal-modified carbide surfaces. Chemical Society Reviews, 2017, 46, 1807-1823.	18.7	85
90	Pd-Modified Tungsten Carbide for Methanol Electro-oxidation: From Surface Science Studies to Electrochemical Evaluation. ACS Catalysis, 2012, 2, 751-758.	5.5	84

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91	Electrochemical Conversion of CO₂ to Syngas with Palladium-Based Electrocatalysts. Accounts of Chemical Research, 2020, 53, 1535-1544.	7.6	81
92	Correlating Ethylene Glycol Reforming Activity with In Situ EXAFS Detection of Ni Segregation in Supported NiPt Bimetallic Catalysts. ACS Catalysis, 2012, 2, 2290-2296.	5.5	80
93	Porous MS₂/MO₂ (M = W, Mo) Nanorods as Efficient Hydrogen Evolution Reaction Catalysts. ACS Catalysis, 2016, 6, 6585-6590.	5.5	80
94	Hydrodeoxygenation of biomass-derived oxygenates over metal carbides: from model surfaces to powder catalysts. Green Chemistry, 2018, 20, 2679-2696.	4.6	80
95	Potential Application of Tungsten Carbides as Electrocatalysts. 1. Decomposition of Methanol over Carbide-Modified W(111). Journal of Physical Chemistry B, 2001, 105, 10037-10044.	1.2	79
96	Electrochemical Stability of Tungsten and Tungsten Monocarbide (WC) Over Wide pH and Potential Ranges. Journal of the Electrochemical Society, 2010, 157, F179.	1.3	79
97	Enhancing Câ€"C Bond Scission for Efficient Ethanol Oxidation using PtIr Nanocube Electrocatalysts. ACS Catalysis, 2019, 9, 7618-7625.	5.5	79
98	Understanding the Role of Functional Groups in Polymeric Binder for Electrochemical Carbon Dioxide Reduction on Gold Nanoparticles. Advanced Functional Materials, 2018, 28, 1804762.	7.8	76
99	Understanding the Role of M/Pt(111) (M = Fe, Co, Ni, Cu) Bimetallic Surfaces for Selective Hydrodeoxygenation of Furfural. ACS Catalysis, 2017, 7, 5758-5765.	5.5	76
100	Effects of oxide supports on the CO2 reforming of ethane over Pt-Ni bimetallic catalysts. Applied Catalysis B: Environmental, 2019, 245, 376-388.	10.8	75
101	Trends and Descriptors of Metal-Modified Transition Metal Carbides for Hydrogen Evolution in Alkaline Electrolyte. ACS Catalysis, 2019, 9, 2415-2422.	5.5	74
102	CO₂ hydrogenation over heterogeneous catalysts at atmospheric pressure: from electronic properties to product selectivity. Green Chemistry, 2021, 23, 249-267.	4.6	74
103	Reaction pathways of furfural, furfuryl alcohol and 2-methylfuran on Cu(111) and NiCu bimetallic surfaces. Surface Science, 2016, 652, 91-97.	0.8	73
104	Tungsten carbides as selective deoxygenation catalysts: experimental and computational studies of converting C3 oxygenates to propene. Green Chemistry, 2014, 16, 761-769.	4.6	71
105	Predicting the Activity and Selectivity of Bimetallic Metal Catalysts for Ethanol Reforming using Machine Learning. ACS Catalysis, 2020, 10, 9438-9444.	5.5	71
106	Potential Application of Tungsten Carbides as Electrocatalysts:â€‰ 4. Reactions of Methanol, Water, and Carbon Monoxide over Carbide-Modified W(110). Journal of Physical Chemistry B, 2003, 107, 2029-2039.	1.2	68
107	Synthesis and Characterization of Three-Dimensionally Ordered Macroporous (3DOM) Tungsten Carbide: Application to Direct Methanol Fuel Cells. Chemistry of Materials, 2010, 22, 966-973.	3.2	68
108	Oxygen Reduction at Very Low Overpotential on Nanoporous Ag Catalysts. Advanced Energy Materials, 2015, 5, 1500149.	10.2	68

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109	Activation of Tungsten Carbide Catalysts by Use of an Oxygen Plasma Pretreatment. ACS Catalysis, 2012, 2, 765-769.	5.5	67
110	Cobalt-modified molybdenum carbide as a selective catalyst for hydrodeoxygenation of furfural. Applied Catalysis B: Environmental, 2018, 233, 160-166.	10.8	64
111	Photoelectrochemical reforming of glucose for hydrogen production using a WO3-based tandem cell device. Energy and Environmental Science, 2012, 5, 9091.	15.6	63
112	Potential application of tungsten carbides as electrocatalysts III. Reactions of methanol, water, and hydrogen on Pt-modified C/W(111) surfaces. Journal of Catalysis, 2003, 215, 254-263.	3.1	62
113	Direct Epoxidation of Propylene over Stabilized Cu⁺ Surface Sites on Titaniumâ€Modified Cu₂O. Angewandte Chemie - International Edition, 2015, 54, 11946-11951.	7.2	62
114	Tandem Reactions of CO₂ Reduction and Ethane Aromatization. Journal of the American Chemical Society, 2019, 141, 17771-17782.	6.6	62
115	Combining CO₂ Reduction with Ethane Oxidative Dehydrogenation by Oxygen-Modification of Molybdenum Carbide. ACS Catalysis, 2018, 8, 5374-5381.	5.5	58
116	A Combined experimental and theoretical study of the accelerated hydrogen evolution kinetics over wide pH range on porous transition metal doped tungsten phosphide electrocatalysts. Applied Catalysis B: Environmental, 2019, 251, 162-167.	10.8	58
117	Bimetallic Electrocatalysts for CO2 Reduction. Topics in Current Chemistry, 2018, 376, 41.	3.0	57
118	Elucidating the roles of metallic Ni and oxygen vacancies in CO2 hydrogenation over Ni/CeO2 using isotope exchange and in situ measurements. Applied Catalysis B: Environmental, 2019, 245, 360-366.	10.8	57
119	Interfacial Active Sites for CO2 Assisted Selective Cleavage of Câ€“C/Câ€“H Bonds in Ethane. CheM, 2020, 6, 2703-2716.	5.8	57
120	Potential Application of Tungsten Carbides as Electrocatalysts. 2. Coadsorption of CO and H2O on Carbide-Modified W(111). Journal of Physical Chemistry B, 2001, 105, 10045-10053.	1.2	56
121	Theoretical prediction and experimental verification of low loading of platinum on titanium carbide as low-cost and stable electrocatalysts. Journal of Catalysis, 2014, 312, 216-220.	3.1	56
122	Identifying Dynamic Structural Changes of Active Sites in Ptâ€“Ni Bimetallic Catalysts Using Multimodal Approaches. ACS Catalysis, 2018, 8, 4120-4131.	5.5	54
123	Controlling reaction pathways of selective Câ€“O bond cleavage of glycerol. Nature Communications, 2018, 9, 4612.	5.8	54
124	Insight into Acetic Acid Synthesis from the Reaction of CH₄ and CO₂. ACS Catalysis, 2021, 11, 3384-3401.	5.5	53
125	Reactions of methanol and water over carbide-modified Mo(). Surface Science, 2003, 536, 75-87.	0.8	52
126	Biomass conversion to H₂ with substantially suppressed CO₂ formation in the presence of Group I & Group II hydroxides and a Ni/ZrO₂ catalyst. Energy and Environmental Science, 2015, 8, 1702-1706.	15.6	52

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127	Controlling Câ€“O, Câ€“C and Câ€“H bond scission for deoxygenation, reforming, and dehydrogenation of ethanol using metal-modified molybdenum carbide surfaces. Green Chemistry, 2014, 16, 777-784.	4.6	51
128	Pt-modified molybdenum carbide for the hydrogen evolution reaction: From model surfaces to powder electrocatalysts. Journal of Power Sources, 2014, 271, 76-81.	4.0	51
129	Reaction Pathways of Biomassâ€Derived Oxygenates over Metals and Carbides: From Model Surfaces to Supported Catalysts. ChemCatChem, 2015, 7, 1402-1421.	1.8	50
130	Exploring Metalâ€“Support Interactions To Immobilize Subnanometer Co Clusters on Î³â€“Mo₂N: A Highly Selective and Stable Catalyst for CO₂ Activation. ACS Catalysis, 2019, 9, 9087-9097.	5.5	50
131	Comparison of Oâˆ’H, Câˆ’H, and Câˆ’O Bond Scission Sequence of Methanol on Tungsten Carbide Surfaces Modified by Ni, Rh, and Au. Journal of Physical Chemistry C, 2011, 115, 6644-6650.	1.5	49
132	Rotating disk electrode measurements of activity and stability of monolayer Pt on tungsten carbide disks for oxygen reduction reaction. Journal of Power Sources, 2012, 199, 46-52.	4.0	49
133	High selectivity of CO₂ hydrogenation to CO by controlling the valence state of nickel using perovskite. Chemical Communications, 2018, 54, 7354-7357.	2.2	49
134	Reactions of CO2 and ethane enable CO bond insertion for production of C3 oxygenates. Nature Communications, 2020, 11, 1887.	5.8	49
135	Generating Defectâ€Rich Bismuth for Enhancing the Rate of Nitrogen Electroreduction to Ammonia. Angewandte Chemie, 2019, 131, 9564-9569.	1.6	47
136	Electrochemical reduction of acetonitrile to ethylamine. Nature Communications, 2021, 12, 1949.	5.8	47
137	Selective deoxygenation of aldehydes and alcohols on molybdenum carbide (Mo 2 C) surfaces. Applied Surface Science, 2014, 323, 88-95.	3.1	46
138	Janus structured Ptâ€“FeNC nanoparticles as a catalyst for the oxygen reduction reaction. Chemical Communications, 2017, 53, 1660-1663.	2.2	46
139	Role of Surface Oxophilicity in Copper-Catalyzed Water Dissociation. ACS Catalysis, 2018, 8, 9327-9333.	5.5	46
140	Differentiation of Bulk and Surface Contribution to Supercapacitance in Amorphous and Crystalline NiO. ChemSusChem, 2010, 3, 1367-1370.	3.6	45
141	Theoretical and Experimental Studies of Câ€“C versus Câ€“O Bond Scission of Ethylene Glycol Reaction Pathways via Metal-Modified Molybdenum Carbides. ACS Catalysis, 2014, 4, 1409-1418.	5.5	45
142	Replacing bulk Pt in Ptâ€“Niâ€“Pt bimetallic structures with tungsten monocarbide (WC): Hydrogen adsorption and cyclohexene hydrogenation on Ptâ€“Niâ€“WC. Journal of Catalysis, 2010, 271, 132-139.	3.1	44
143	Replacing Platinum with Tungsten Carbide (WC) for Reforming Reactions: Similarities in Ethanol Decomposition on Ni/Pt and Ni/WC Surfaces. ACS Catalysis, 2011, 1, 390-398.	5.5	44
144	Reforming of Oxygenates for H2 Production on 3d/Pt(111) Bimetallic Surfaces. Topics in Catalysis, 2008, 51, 49-59.	1.3	42

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145	Glycolaldehyde as a Probe Molecule for Biomass Derivatives: Reaction of Câ€"OH and Câ•O Functional Groups on Monolayer Ni Surfaces. Journal of the American Chemical Society, 2011, 133, 20528-20535.	6.6	42
146	Low loadings of platinum on transition metal carbides for hydrogen oxidation and evolution reactions in alkaline electrolytes. Chemical Communications, 2016, 52, 3697-3700.	2.2	42
147	Constant Electrode Potential Quantum Mechanical Study of CO₂ Electrochemical Reduction Catalyzed by N-Doped Graphene. ACS Catalysis, 2019, 9, 8197-8207.	5.5	42
148	Reaction Pathways and Intermediates in Selective Ring Opening of Biomass-Derived Heterocyclic Compounds by Iridium. ACS Catalysis, 2016, 6, 7002-7009.	5.5	41
149	Potential Application of Tungsten Carbides as Electrocatalysts: Synergistic Effect by Supporting Pt on Câˆ•W(110) for the Reactions of Methanol, Water, and CO. Journal of the Electrochemical Society, 2005, 152, A1483.	1.3	40
150	Achieving complete electrooxidation of ethanol by single atomic Rh decoration of Pt nanocubes. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2112109119.	3.3	40
151	Synthesis, characterization and surface reactivity of tungsten carbide (WC) PVD films. Surface Science, 2004, 569, 89-98.	0.8	39
152	Catalysis Center for Energy Innovation for Biomass Processing: Research Strategies and Goals. Catalysis Letters, 2010, 140, 77-84.	1.4	38
153	The effects of bimetallic interactions for CO₂â€assisted oxidative dehydrogenation and dry reforming of propane. AIChE Journal, 2019, 65, e16670.	1.8	38
154	Enhancing CO Tolerance of Electrocatalysts: Electro-oxidation of CO on WC and Pt-Modified WC. Electrochemical and Solid-State Letters, 2008, 11, B63.	2.2	37
155	Response to Comment on â€œActive sites for CO ₂ hydrogenation to methanol on Cu/ZnO catalystsâ€• Science, 2017, 357, .	6.0	37
156	Ringâ€Opening Reaction of Furfural and Tetrahydrofurfuryl Alcohol on Hydrogenâ€Predosed Iridium(1â€‰1â€‰1) and Cobalt/Iridium(1â€‰1â€‰1) Surfaces. ChemCatChem, 2017, 9, 1701-1707.	1.8	34
157	Reaction Pathways of Propanal and 1-Propanol on Fe/Ni(111) and Cu/Ni(111) Bimetallic Surfaces. Journal of Physical Chemistry C, 2014, 118, 11340-11349.	1.5	33
158	A Combined Surface Science and Electrochemical Study of Tungsten Carbides as Anode Electrocatalysts. Topics in Catalysis, 2007, 46, 349-357.	1.3	32
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