Israel E Wachs

List of Publications by Year
in descending order

341 papers	35,892 citations	1299 109 h-index	4223 174 g-index
363 all docs	363 docs citations	363 times ranked	18835 citing authors

#	Article	IF	Citations
1	Raman and IR studies of surface metal oxide species on oxide supports: Supported metal oxide catalysts. Catalysis Today, 1996, 27, 437-455.	2.2	794
2	Surface Chemistry and Spectroscopy of Chromium in Inorganic Oxides. Chemical Reviews, 1996, 96, 3327-3350.	23.0	729
3	Structure and reactivity of surface vanadium oxide species on oxide supports. Applied Catalysis A: General, 1997, 157, 67-90.	2.2	636
4	Titaniaâ€“silica as catalysts: molecular structural characteristics and physico-chemical properties. Catalysis Today, 1999, 51, 233-254.	2.2	631
5	Structural chemistry and Raman spectra of niobium oxides. Chemistry of Materials, 1991, 3, 100-107.	3.2	598
6	The selective oxidation of CH3OH to H2CO on a copper(110) catalyst. Journal of Catalysis, 1978, 53, 208-227.	3.1	541
7	Recent conceptual advances in the catalysis science of mixed metal oxide catalytic materials. Catalysis Today, 2005, 100, 79-94.	2.2	511
8	Determination of vanadium-oxygen bond distances and bond orders by Raman spectroscopy. The Journal of Physical Chemistry, 1991, 95, 5031-5041.	2.9	489
9	Reactivity of Supported Vanadium Oxide Catalysts: The Partial Oxidation of Methanol. Journal of Catalysis, 1994, 146, 323-334.	3.1	486
10	Critical Literature Review of the Kinetics for the Oxidative Dehydrogenation of Propane over Well-Defined Supported Vanadium Oxide Catalysts. ACS Catalysis, 2014, 4, 3357-3380.	5.5	453
11	Spectroscopic Characterization of Mixed Feâ€“Ni Oxide Electrocatalysts for the Oxygen Evolution Reaction in Alkaline Electrolytes. ACS Catalysis, 2012, 2, 1793-1801.	5.5	423
12	Alumina-Supported Manganese Oxide Catalysts. Journal of Catalysis, 1994, 150, 94-104.	3.1	403
13	Solid-state vanadium-51 NMR structural studies on supported vanadium(V) oxide catalysts: vanadium oxide surface layers on alumina and titania supports. The Journal of Physical Chemistry, 1989, 93, 6796-6805.	2.9	397
14	The oxidation of methanol on a silver (110) catalyst. Surface Science, 1978, 76, 531-558.	0.8	385
15	In situ Raman spectroscopy of alumina-supported metal oxide catalysts. The Journal of Physical Chemistry, 1992, 96, 5008-5016.	2.9	362
16	Surface Structures of Supported Molybdenum Oxide Catalysts: Characterization by Raman and Mo L3-Edge XANES. The Journal of Physical Chemistry, 1995, 99, 10897-10910.	2.9	358
17	Structural Determination of Bulk and Surface Tungsten Oxides with UVâˆ'vis Diffuse Reflectance Spectroscopy and Raman Spectroscopy. Journal of Physical Chemistry C, 2007, 111, 15089-15099.	1.5	358
18	Molecular structures of supported metal oxide catalysts under different environments. Journal of Raman Spectroscopy, 2002, 33, 359-380.	1.2	348

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19	A Perspective on the Selective Catalytic Reduction (SCR) of NO with NH₃ by Supported V₂O₅â€“WO₃/TiO₂ Catalysts. ACS Catalysis, 2018, 8, 6537-6551.	5.5	342
20	Investigation of Surface Structures of Supported Vanadium Oxide Catalysts by UVâˆ’visâˆ’NIR Diffuse Reflectance Spectroscopy. Journal of Physical Chemistry B, 2000, 104, 1261-1268.	1.2	340
21	In Situ Spectroscopic Investigation of Molecular Structures of Highly Dispersed Vanadium Oxide on Silica under Various Conditions. Journal of Physical Chemistry B, 1998, 102, 10842-10852.	1.2	338
22	Acidic properties of supported niobium oxide catalysts: An infrared spectroscopy investigation. Journal of Catalysis, 1992, 135, 186-199.	3.1	337
23	Catalysis science of supported vanadium oxide catalysts. Dalton Transactions, 2013, 42, 11762.	1.6	324
24	Preparation and in-Situ Spectroscopic Characterization of Molecularly Dispersed Titanium Oxide on Silica. Journal of Physical Chemistry B, 1998, 102, 5653-5666.	1.2	311
25	Identification of molybdenum oxide nanostructures on zeolites for natural gas conversion. Science, 2015, 348, 686-690.	6.0	310
26	Predicting molecular structures of surface metal oxide species on oxide supports under ambient conditions. The Journal of Physical Chemistry, 1991, 95, 5889-5895.	2.9	306
27	Determination of molybdenum-oxygen bond distances and bond orders by Raman spectroscopy. Journal of Raman Spectroscopy, 1990, 21, 683-691.	1.2	303
28	Acidic properties of alumina-supported metal oxide catalysts: an infrared spectroscopy study. The Journal of Physical Chemistry, 1992, 96, 5000-5007.	2.9	295
29	Oxidation of sulfur dioxide to sulfur trioxide over supported vanadia catalysts. Applied Catalysis B: Environmental, 1998, 19, 103-117.	10.8	295
30	In Situ Spectroscopic Investigation of the Molecular and Electronic Structures of SiO₂ Supported Surface Metal Oxides. Journal of Physical Chemistry C, 2007, 111, 14410-14425.	1.5	284
31	Bonding states of surface vanadium(V) oxide phases on silica: structural characterization by vanadium-51 NMR and Raman spectroscopy. The Journal of Physical Chemistry, 1993, 97, 8240-8243.	2.9	274
32	Iron-Based Catalysts for the High-Temperature Waterâ€“Gas Shift (HT-WGS) Reaction: A Review. ACS Catalysis, 2016, 6, 722-732.	5.5	267
33	Nature of Active Sites and Surface Intermediates during SCR of NO with NH₃ by Supported V₂O₅â€“WO₃/TiO₂ Catalysts. Journal of the American Chemical Society, 2017, 139, 15624-15627.	6.6	266
34	Monitoring surface metal oxide catalytic active sites with Raman spectroscopy. Chemical Society Reviews, 2010, 39, 5002.	18.7	264
35	Structural determination of supported vanadium pentoxide-tungsten trioxide-titania catalysts by in situ Raman spectroscopy and x-ray photoelectron spectroscopy. The Journal of Physical Chemistry, 1991, 95, 9928-9937.	2.9	256
36	Reactivity of V2O5Catalysts for the Selective Catalytic Reduction of NO by NH3: Influence of Vanadia Loading, H2O, and SO2. Journal of Catalysis, 1996, 161, 247-253.	3.1	253

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37	Methanol: A â€œSmartâ€•Chemical Probe Molecule. Catalysis Letters, 2001, 75, 137-149.	1.4	247
38	Olefin Metathesis by Supported Metal Oxide Catalysts. ACS Catalysis, 2014, 4, 2505-2520.	5.5	238
39	The interaction of vanadium pentoxide with titania (anatase): Part I. Effect on o-xylene oxidation to phthalic anhydride. Applied Catalysis, 1985, 15, 339-352.	1.1	236
40	Selective Catalytic Reduction of NO with NH3over Supported Vanadia Catalysts. Journal of Catalysis, 1996, 161, 211-221.	3.1	232
41	Title is missing!. Topics in Catalysis, 2000, 11/12, 85-100.	1.3	230
42	Quantitative Determination of the Speciation of Surface Vanadium Oxides and Their Catalytic Activity. Journal of Physical Chemistry B, 2006, 110, 9593-9600.	1.2	216
43	Raman spectroscopy of chromium oxide supported on Al2O3, TiO2 and SiO2: a comparative study. Journal of Molecular Catalysis, 1988, 46, 173-186.	1.2	212
44	New insights into the nature of the acidic catalytic active sites present in ZrO2-supported tungsten oxide catalysts. Journal of Catalysis, 2008, 256, 108-125.	3.1	200
45	The interaction of V2O5 with Ti02(anatase): Catalyst evolution with calcination temperature and O-xylene oxidation. Journal of Catalysis, 1986, 98, 102-114.	3.1	194
46	The origin of the support effect in supported metal oxide catalysts: in situ infrared and kinetic studies during methanol oxidation. Catalysis Today, 1999, 49, 467-484.	2.2	189
47	Combined DRSâ€"RSâ€"EXAFSâ€"XANESâ€"TPR study of supported chromium catalysts. Journal of the Chemical Society, Faraday Transactions, 1995, 91, 3245-3253.	1.7	188
48	The effect of metal oxide additives on the activity of V2O5/TiO2 catalysts for the selective catalytic reduction of nitric oxide by ammonia. Applied Catalysis B: Environmental, 1999, 20, 111-122.	10.8	187
49	A Raman and ultraviolet diffuse reflectance spectroscopic investigation of silica-supported molybdenum oxide. The Journal of Physical Chemistry, 1991, 95, 8781-8791.	2.9	183
50	Molecular structure and reactivity of the Group V metal oxides. Catalysis Today, 2003, 78, 13-24.	2.2	182
51	In Situ Raman Spectroscopy of SiO₂-Supported Transition Metal Oxide Catalysts:â€‰ An Isotopic ¹⁸Oâˆ’¹⁶O Exchange Study. Journal of Physical Chemistry C, 2008, 112, 6487-6498.	1.5	182
52	Effect of Additives on the Structure and Reactivity of the Surface Vanadium Oxide Phase in V2O5/TiO2 Catalysts. Journal of Catalysis, 1994, 146, 335-345.	3.1	181
53	Characterization of titania silicalites. Zeolites, 1993, 13, 365-373.	0.9	177
54	Molecular/electronic structureâ€"surface acidity relationships of model-supported tungsten oxide catalysts. Journal of Catalysis, 2007, 246, 370-381.	3.1	177

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55	Catalysis Science of Bulk Mixed Oxides. ACS Catalysis, 2012, 2, 1235-1246.	5.5	177
56	Oxidative dehydrogenation of ethane to ethylene over alumina-supported vanadium oxide catalysts: Relationship between molecular structures and chemical reactivity. Catalysis Today, 2006, 118, 279-287.	2.2	171
57	The effect of the phase composition of model VPO catalysts for partial oxidation of n-butane. Catalysis Today, 1996, 28, 275-295.	2.2	169
58	Isopropanol oxidation by pure metal oxide catalysts: number of active surface sites and turnover frequencies. Applied Catalysis A: General, 2002, 237, 121-137.	2.2	167
59	The molecular structure of bismuth oxide by Raman spectroscopy. Journal of Solid State Chemistry, 1992, 97, 319-331.	1.4	165
60	Induced activation of the commercial Cu/ZnO/Al2O3 catalyst for the steam reforming of methanol. Nature Catalysis, 2022, 5, 99-108.	16.1	155
61	Quantification of Active Sites for the Determination of Methanol Oxidation Turn-over Frequencies Using Methanol Chemisorption and in Situ Infrared Techniques. 1. Supported Metal Oxide Catalysts. Langmuir, 2001, 17, 6164-6174.	1.6	154
62	Catalysis science of the solid acidity of model supported tungsten oxide catalysts. Catalysis Today, 2006, 116, 162-168.	2.2	154
63	Characterization of chromium oxide supported on Al2O3, ZrO2, TiO2, and SiO2 under dehydrated conditions. Journal of Molecular Catalysis, 1993, 80, 209-227.	1.2	152
64	The molecular structures and reactivity of supported niobium oxide catalysts. Catalysis Today, 1990, 8, 37-55.	2.2	151
65	Oxidative dehydrogenation of propane over V/MCM-41 catalysts: comparison of O2 and N2O as oxidants. Journal of Catalysis, 2005, 234, 131-142.	3.1	151
66	Monolayer V2O5/TiO2 and MoO3/TiO2 catalysts prepared by different methods. Applied Catalysis, 1991, 70, 115-128.	1.1	150
67	Identification of active Zrâ€“WOx clusters on a ZrO2 support for solid acid catalysts. Nature Chemistry, 2009, 1, 722-728.	6.6	150
68	Surface structures of supported tungsten oxide catalysts under dehydrated conditions. Journal of Molecular Catalysis A, 1996, 106, 93-102.	4.8	147
69	Molecular Structural Determination of Molybdena in Different Environments: Aqueous Solutions, Bulk Mixed Oxides, and Supported MoO₃ Catalysts. Journal of Physical Chemistry C, 2010, 114, 14110-14120.	1.5	146
70	In Situ Vibrational Spectroscopy Studies of Supported Niobium Oxide Catalysts. Journal of Physical Chemistry B, 1999, 103, 6015-6024.	1.2	145
71	The oxidation of ethanol on Cu(110) and Ag(110) catalysts. Applications of Surface Science, 1978, 1, 303-328.	1.0	144
72	Comparison of UV and Visible Raman Spectroscopy of Bulk Metal Molybdate and Metal Vanadate Catalysts. Journal of Physical Chemistry B, 2005, 109, 23491-23499.	1.2	143

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73	Determination of niobium-oxygen bond distances and bond orders by Raman spectroscopy. Solid State Ionics, 1991, 45, 201-213.	1.3	141
74	Effect of water vapor on the molecular structures of supported vanadium oxide catalysts at elevated temperatures. Journal of Molecular Catalysis A, 1996, 110, 41-54.	4.8	140
75	Molecular structure of molybdenum oxide in bismuth molybdates by Raman spectroscopy. The Journal of Physical Chemistry, 1991, 95, 10763-10772.	2.9	139
76	Catalytic Properties of Supported Molybdenum Oxide Catalysts: In Situ Raman and Methanol Oxidation Studies. The Journal of Physical Chemistry, 1995, 99, 10911-10922.	2.9	139
77	In Situ UVâ€“visâ€“NIR Diffuse Reflectance and Raman Spectroscopic Studies of Propane Oxidation over ZrO2-Supported Vanadium Oxide Catalysts. Journal of Catalysis, 2002, 209, 43-50.	3.1	139
78	Molecular structure and reactivity of the group V metal oxides. Catalysis Today, 2000, 57, 323-330.	2.2	138
79	Determination of the molecular structures of tungstates by Raman spectroscopy. Journal of Raman Spectroscopy, 1995, 26, 397-405.	1.2	137
80	Influence of catalyst synthesis method on selective catalytic reduction (SCR) of NO by NH3 with V2O5-WO3/TiO2 catalysts. Applied Catalysis B: Environmental, 2016, 193, 141-150.	10.8	136
81	Oxidative Coupling of Methane (OCM) by SiO₂-Supported Tungsten Oxide Catalysts Promoted with Mn and Na. ACS Catalysis, 2019, 9, 5912-5928.	5.5	136
82	Structural and Reactivity Properties of Nbî—¸MCM-41: Comparison with That of Highly Dispersed Nb2O5/SiO2 Catalysts. Journal of Catalysis, 2001, 203, 18-24.	3.1	135
83	A Raman and ultraviolet diffuse reflectance spectroscopic investigation of alumina-supported molybdenum oxide. The Journal of Physical Chemistry, 1991, 95, 8791-8797.	2.9	133
84	Catalysis Science of Methanol Oxidation over Iron Vanadate Catalysts: Nature of the Catalytic Active Sites. ACS Catalysis, 2011, 1, 54-66.	5.5	133
85	Fundamental Studies of Butane Oxidation over Model-Supported Vanadium Oxide Catalysts: Molecular Structure-Reactivity Relationships. Journal of Catalysis, 1997, 170, 75-88.	3.1	132
86	In Situ Raman Spectroscopy of Supported Transition Metal Oxide Catalysts:Â18O2âˆ’16O2Isotopic Labeling Studies. Journal of Physical Chemistry B, 2000, 104, 7382-7387.	1.2	131
87	Physical and chemical characterization of surface vanadium oxide supported on titania: influence of the titania phase (anatase, rutile, brookite and B). Applied Catalysis A: General, 1992, 91, 27-42.	2.2	130
88	Interaction of Polycrystalline Silver with Oxygen, Water, Carbon Dioxide, Ethylene, and Methanol:Â In Situ Raman and Catalytic Studies. Journal of Physical Chemistry B, 1999, 103, 5645-5656.	1.2	128
89	Molecular Structures and Reactivity of Supported Molybdenum Oxide Catalysts. Journal of Catalysis, 1994, 149, 268-277.	3.1	127
90	Oxidation of sulfur dioxide over supported vanadia catalysts: molecular structure â€“ reactivity relationships and reaction kinetics. Catalysis Today, 1999, 51, 301-318.	2.2	126

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91	A decade+ of operando spectroscopy studies. Catalysis Today, 2017, 283, 27-53.	2.2	126
92	Remarkable spreading behavior of molybdena on silica catalysts. Anin situ EXAFS-Raman study. Catalysis Letters, 1991, 11, 227-239.	1.4	125
93	The oxidation of H2CO on a copper(110) surface. Surface Science, 1979, 84, 375-386.	0.8	124
94	Ethane and n-Butane Oxidation over Supported Vanadium Oxide Catalysts: An in Situ UVâ€“Visible Diffuse Reflectance Spectroscopic Investigation. Journal of Catalysis, 1999, 188, 325-331.	3.1	124
95	How Strain Affects the Reactivity of Surface Metal Oxide Catalysts. Angewandte Chemie - International Edition, 2013, 52, 13553-13557.	7.2	124
96	Surface oxide-support interaction (SOSI) for surface redox sites. Journal of Catalysis, 1991, 129, 307-312.	3.1	123
97	Photo-oxidation of methanol using : Catalyst structure and reaction selectivity. Journal of Catalysis, 1985, 94, 108-119.	3.1	122
98	Surface structures of supported molybdenum oxide catalysts under ambient conditions. Journal of Catalysis, 1992, 136, 539-553.	3.1	121
99	Molybdena on Silica Catalysts: Role of Preparation Methods on the Structure-Selectivity Properties for the Oxidation of Methanol. Journal of Catalysis, 1994, 150, 407-420.	3.1	119
100	CH3OH oxidation over well-defined supported V2O5/Al2O3 catalysts: Influence of vanadium oxide loading and surface vanadiumâ€“oxygen functionalities. Journal of Catalysis, 2008, 255, 197-205.	3.1	118
101	Probing Metalâ^'Support Interactions under Oxidizing and Reducing Conditions:â€‰ In Situ Raman and Infrared Spectroscopic and Scanning Transmission Electron Microscopicâ^'X-ray Energy-Dispersive Spectroscopic Investigation of Supported Platinum Catalysts. Journal of Physical Chemistry C, 2008, 112, 5942-5951.	1.5	118
102	Structural Characteristics and Reactivity/Reducibility Properties of Dispersed and Bilayered V2O5/TiO2/SiO2 Catalysts. Journal of Physical Chemistry B, 1999, 103, 618-629.	1.2	117
103	Vanadium(V) environments in bismuth vanadates: A structural investigation using Raman spectroscopy and solid state 51V NMR. Journal of Solid State Chemistry, 1991, 90, 194-210.	1.4	116
104	Structural determination of surface rhenium oxide on various oxide supports (Al2O3, ZrO2, TiO2 and) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	1.2	116
105	Dynamic behavior of supported vanadia catalysts in the selective oxidation of ethane. Catalysis Today, 2000, 61, 295-301.	2.2	115
106	Oxidative Dehydrogenation of Propane over Supported Chromia Catalysts: Influence of Oxide Supports and Chromia Loading. Journal of Catalysis, 2002, 211, 482-495.	3.1	114
107	Determination of the Chemical Nature of Active Surface Sites Present on Bulk Mixed Metal Oxide Catalystsâ€. Journal of Physical Chemistry B, 2005, 109, 2275-2284.	1.2	113
108	Molecular structures of supported niobium oxide catalysts under in situ conditions. The Journal of Physical Chemistry, 1991, 95, 7373-7379.	2.9	112

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109	Combined Raman and IR study of MOxâ€"V2O5/Al2O3(MOx= MoO3, WO3, NiO, CoO) catalysts under dehydrated conditions. Journal of the Chemical Society, Faraday Transactions, 1996, 92, 3259-3265.	1.7	111
110	The dynamic states of silica-supported metal oxide catalysts during methanol oxidation. Catalysis Today, 1996, 28, 335-350.	2.2	111
111	In situ Raman spectroscopy studies of catalysts. Topics in Catalysis, 1999, 8, 57-63.	1.3	111
112	A Comparison of Ultraviolet and Visible Raman Spectra of Supported Metal Oxide Catalysts. Journal of Physical Chemistry B, 2001, 105, 8600-8606.	1.2	111
113	Origin of the synergistic interaction between MoO3 and iron molybdate for the selective oxidation of methanol to formaldehyde. Journal of Catalysis, 2010, 275, 84-98.	3.1	110
114	Laser Raman characterization of tungsten oxide supported on alumina: Influence of calcination temperatures. Journal of Catalysis, 1985, 92, 1-10.	3.1	107
115	Oxidation of SO2over Supported Metal Oxide Catalysts. Journal of Catalysis, 1999, 181, 233-243.	3.1	107
116	The structure of surface rhenium oxide on alumina from laser raman spectroscopy and x-ray absorption near-edge spectroscopy. Journal of Molecular Catalysis, 1988, 46, 15-36.	1.2	106
117	In SituRaman Spectroscopy of Supported Chromium Oxide Catalysts:Â Reactivity Studies with Methanol and Butane. The Journal of Physical Chemistry, 1996, 100, 14437-14442.	2.9	105
118	Overview of Selective Oxidation of Ethylene to Ethylene Oxide by Ag Catalysts. ACS Catalysis, 2019, 9, 10727-10750.	5.5	104
119	Comparison of Silica-Supported MoO3and V2O5Catalysts in the Selective Partial Oxidation of Methane. Journal of Catalysis, 1996, 160, 214-221.	3.1	103
120	Surface Chemistry of Supported Chromium Oxide Catalysts. Journal of Catalysis, 1993, 142, 166-171.	3.1	102
121	Characterization of CrO3/Al2O3 catalysts under ambient conditions: Influence of coverage and calcination temperature. Journal of Molecular Catalysis, 1993, 84, 193-205.	1.2	102
122	The formation of titanium oxide monolayer coatings on silica surfaces. Journal of Catalysis, 1991, 131, 260-275.	3.1	100
123	Structural Characteristics and Catalytic Properties of Highly Dispersed ZrO2/SiO2and V2O5/ZrO2/SiO2Catalysts. Langmuir, 1999, 15, 3169-3178.	1.6	100
124	Quantitative determination of the number of surface active sites and the turnover frequency for methanol oxidation over bulk metal vanadates. Catalysis Today, 2003, 78, 257-268.	2.2	100
125	Surface structure and reactivity of CrO3/SiO2 catalysts. Journal of Catalysis, 1992, 136, 209-221.	3.1	98
126	In situ Raman spectroscopy studies of bulk and surface metal oxide phases during oxidation reactions. Catalysis Today, 1996, 32, 47-55.	2.2	98

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127	Promotion Mechanisms of Iron Oxide-Based High Temperature Waterâ€“Gas Shift Catalysts by Chromium and Copper. ACS Catalysis, 2016, 6, 4455-4464.	5.5	98
128	Reaction-Induced Spreading of Metal Oxides onto Surfaces of Oxide Supports during Alcohol Oxidation:Â Phenomenon, Nature, and Mechanisms. Langmuir, 1999, 15, 1223-1235.	1.6	97
129	The Origin of the Ligand Effect in Metal Oxide Catalysts: Novel Fixed-Bed in Situ Infrared and Kinetic Studies during Methanol Oxidation. Journal of Catalysis, 2001, 203, 104-121.	3.1	96
130	Mechanism by which Tungsten Oxide Promotes the Activity of Supported V₂O₅/TiO₂ Catalysts for NO_{<i>X</i>} Abatement: Structural Effects Revealed by ⁵¹V MAS NMR Spectroscopy. Angewandte Chemie - International Edition, 2019, 58, 12609-12616.	7.2	96
131	Quantitative determination of the number of active surface sites and the turnover frequencies for methanol oxidation over metal oxide catalysts. Catalysis Today, 2000, 62, 219-229.	2.2	95
132	Relating <i>n</i>-Pentane Isomerization Activity to the Tungsten Surface Density of WO_{<i>x</i>}/ZrO₂. Journal of the American Chemical Society, 2010, 132, 13462-13471.	6.6	94
133	Supported Tantalum Oxide Catalysts:Â Synthesis, Physical Characterization, and Methanol Oxidation Chemical Probe Reaction. Journal of Physical Chemistry B, 2003, 107, 5243-5250.	1.2	93
134	Oxidative dehydrogenation of propane over niobia supported vanadium oxide catalysts. Catalysis Today, 1996, 28, 139-145.	2.2	91
135	Redox properties of niobium oxide catalysts. Catalysis Today, 1996, 28, 199-205.	2.2	91
136	Relative raman cross-sections of tungsten oxides: 6WO3, Al2(WO4)3 and WO3/Al2O39. Journal of Catalysis, 1984, 90, 150-155.	3.1	90
137	Physicochemical properties of MoO3î—¸TiO2 prepared by an equilibrium adsorption method. Journal of Catalysis, 1989, 120, 325-336.	3.1	90
138	Vibrational analysis of the two non-equivalent, tetrahedral tungstate (WO4) units in Ce2(WO4)3 and La2(WO4)3. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 1998, 54, 1355-1368.	2.0	88
139	Anomalous reactivity of supported V2O5 nanoparticles for propane oxidative dehydrogenation: influence of the vanadium oxide precursor. Dalton Transactions, 2013, 42, 12644.	1.6	88
140	Structure of Mo₂C_{<i>x</i>} and Mo₄C_{<i>x</i>} Molybdenum Carbide Nanoparticles and Their Anchoring Sites on ZSM-5 Zeolites. Journal of Physical Chemistry C, 2014, 118, 4670-4679.	1.5	88
141	Surface and Bulk Aspects of Mixed Oxide Catalytic Nanoparticles: Oxidation and Dehydration of CH₃OH by Polyoxometallates. Journal of the American Chemical Society, 2009, 131, 15544-15554.	6.6	87
142	In situ laser Raman spectroscopy of nickel oxide supported on $gamma;-Al2O3. Journal of Catalysis, 1987, 103, 224-227.	3.1	86
143	Nature of WO_{<i>x</i>} Sites on SiO₂ and Their Molecular Structureâ€“Reactivity/Selectivity Relationships for Propylene Metathesis. ACS Catalysis, 2016, 6, 3061-3071.	5.5	86
144	Characterization of Vanadia Sites in V-Silicalite, Vanadia-Silica Cogel, and Silica-Supported Vanadia Catalysts: X-Ray Powder Diffraction, Raman Spectroscopy, Solid-State51V NMR, Temperature-Programmed Reduction, and Methanol Oxidation Studies. Journal of Catalysis, 1998, 178, 640-648.	3.1	85

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145	Evolution of the active surface of the vanadyl pyrophosphate catalysts. Catalysis Letters, 1995, 32, 379-386.	1.4	84
146	Characterization of supported rhenium oxide catalysts: effect of loading, support and additives. Physical Chemistry Chemical Physics, 2001, 3, 1144-1152.	1.3	83
147	Niobium oxide solution chemistry. Journal of Raman Spectroscopy, 1991, 22, 83-89.	1.2	82
148	Selective oxidation of propylene to acrolein over supported V2O5/Nb2O5 catalysts: An in situ Raman, IR, TPSR and kinetic study. Catalysis Today, 2006, 118, 332-343.	2.2	82
149	Strong Metalâ€“Support Interactions between Copper and Iron Oxide during the Highâ€Temperature Waterâ€Gas Shift Reaction. Angewandte Chemie - International Edition, 2019, 58, 9083-9087.	7.2	82
150	Development of active oxide catalysts for the direct oxidation of methane to formaldehyde. Catalysis Today, 1997, 37, 1-14.	2.2	81
151	Oxidative Dehydrogenation of Propane over Supported Chromia Catalysts: Influence of Oxide Supports and Chromia Loading. Journal of Catalysis, 2002, 211, 482-495.	3.1	79
152	Applications of High Sensitivity-Low Energy Ion Scattering (HS-LEIS) in heterogeneous catalysis. Catalysis Today, 2009, 140, 197-201.	2.2	79
153	In SituRaman Spectroscopy during the Partial Oxidation of Methane to Formaldehyde over Supported Vanadium Oxide Catalysts. Journal of Catalysis, 1997, 165, 91-101.	3.1	78
154	Reaction Pathways and Kinetics for Selective Catalytic Reduction (SCR) of Acidic NO_{<i>x</i>} Emissions from Power Plants with NH₃. ACS Catalysis, 2017, 7, 8358-8361.	5.5	78
155	Quantification of Active Sites for the Determination of Methanol Oxidation Turn-over Frequencies Using Methanol Chemisorption and in Situ Infrared Techniques. 2. Bulk Metal Oxide Catalysts. Langmuir, 2001, 17, 6175-6184.	1.6	77
156	Nature of Catalytically Active Sites in the Supported WO₃/ZrO₂ Solid Acid System: A Current Perspective. ACS Catalysis, 2017, 7, 2181-2198.	5.5	77
157	Methane activation by ZSM-5-supported transition metal centers. Chemical Society Reviews, 2021, 50, 1251-1268.	18.7	77
158	Title is missing!. Topics in Catalysis, 2000, 10, 241-254.	1.3	73
159	Surface modified niobium oxide catalyst: synthesis, characterization, and catalysis. Applied Catalysis A: General, 1992, 83, 179-200.	2.2	72
160	Quantitative Determination of the Number of Surface Active Sites and the Turnover Frequencies for Methanol Oxidation over Metal Oxide Catalysts: Application to Bulk Metal Molybdates and Pure Metal Oxide Catalysts. Journal of Catalysis, 2001, 202, 268-278.	3.1	72
161	Formation of N2O greenhouse gas during SCR of NO with NH3 by supported vanadium oxide catalysts. Applied Catalysis B: Environmental, 2018, 224, 836-840.	10.8	72
162	Molecular structures of supported niobium oxide catalysts under ambient conditions. Journal of Molecular Catalysis, 1991, 67, 369-387.	1.2	71

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