Robert J Davis

List of Publications by Year
in descending order

129 papers	10,208 citations	31976 53 h-index	33894 99 g-index
132 all docs	132 docs citations	132 times ranked	9593 citing authors

#	Article	IF	Citations
1	Reactivity of the Gold/Water Interface During Selective Oxidation Catalysis. Science, 2010, 330, 74-78.	12.6	888
2	Selective oxidation of alcohols and aldehydes over supported metal nanoparticles. Green Chemistry, 2013, 15, 17-45.	9.0	659
3	Selective Hydrogenolysis of Polyols and Cyclic Ethers over Bifunctional Surface Sites on Rhodiumâ€“Rhenium Catalysts. Journal of the American Chemical Society, 2011, 133, 12675-12689.	13.7	439
4	Oxidation of 5-hydroxymethylfurfural over supported Pt, Pd and Au catalysts. Catalysis Today, 2011, 160, 55-60.	4.4	353
5	Understanding Au-Catalyzed Low-Temperature CO Oxidation. Journal of Physical Chemistry C, 2007, 111, 11767-11775.	3.1	341
6	On the mechanism of selective oxidation of 5-hydroxymethylfurfural to 2,5-furandicarboxylic acid over supported Pt and Au catalysts. Green Chemistry, 2012, 14, 143-147.	9.0	334
7	Synthesis, Characterization, and Photocatalytic Activity of Titania and Niobia Mesoporous Molecular Sieves. Chemistry of Materials, 1998, 10, 1468-1474.	6.7	332
8	Heterogeneous Catalysts for the Guerbet Coupling of Alcohols. ACS Catalysis, 2013, 3, 1588-1600.	11.2	312
9	Titaniaâ€'Silica:Â A Model Binary Oxide Catalyst System. Chemistry of Materials, 1997, 9, 2311-2324.	6.7	289
10	Glycerol hydrogenolysis on carbon-supported PtRu and AuRu bimetallic catalysts. Journal of Catalysis, 2007, 251, 281-294.	6.2	271
11	Cycloaddition of CO2 to Epoxides over Solid Base Catalysts. Journal of Catalysis, 2001, 199, 85-91.	6.2	245
12	Mechanistic Insights on the Hydrogenation of Î±,Î²-Unsaturated Ketones and Aldehydes to Unsaturated Alcohols over Metal Catalysts. ACS Catalysis, 2012, 2, 671-683.	11.2	206
13	Fe-promotion of supported Rh catalysts for direct conversion of syngas to ethanol. Journal of Catalysis, 2009, 261, 9-16.	6.2	203
14	Promotional effect of hydroxyl on the aqueous phase oxidation of carbon monoxide and glycerol over supported Au catalysts. Topics in Catalysis, 2007, 44, 307-317.	2.8	185
15	The Important Role of Hydroxyl on Oxidation Catalysis by Gold Nanoparticles. Accounts of Chemical Research, 2014, 47, 825-833.	15.6	181
16	A non-porous supported-platinum catalyst for aromatization of n-hexane. Nature, 1991, 349, 313-315.	27.8	151
17	Acidity of Keggin-Type Heteropolycompounds Evaluated by Catalytic Probe Reactions, Sorption Microcalorimetry, and Density Functional Quantum Chemical Calculations. Journal of Physical Chemistry B, 1998, 102, 10817-10825.	2.6	151
18	Xâ€ray Absorption Spectroscopy of Bimetallic Ptâ€“Re Catalysts for Hydrogenolysis of Glycerol to Propanediols. ChemCatChem, 2010, 2, 1107-1114.	3.7	134

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19	Location, Acid Strength, and Mobility of the Acidic Protons in Keggin 12-H3PW12O40:â€‰ A Combined Solid-State NMR Spectroscopy and DFT Quantum Chemical Calculation Study. Journal of the American Chemical Society, 2005, 127, 18274-18280.	13.7	130
20	UVâ^'Vis Spectroscopy of Iodine Adsorbed on Alkali-Metal-Modified Zeolite Catalysts for Addition of Carbon Dioxide to Ethylene Oxide. Journal of Physical Chemistry B, 1999, 103, 6277-6282.	2.6	126
21	Use of kinetic models to explore the role of base promoters on Ru/MgO ammonia synthesis catalysts. Journal of Catalysis, 2004, 225, 359-368.	6.2	119
22	CHEMISTRY: All That Glitters Is Not Au0. Science, 2003, 301, 926-927.	12.6	116
23	Aldol Condensation of Acetaldehyde over Titania, Hydroxyapatite, and Magnesia. ACS Catalysis, 2016, 6, 3193-3202.	11.2	114
24	Evidence for the Bifunctional Nature of Ptâ€“Re Catalysts for Selective Glycerol Hydrogenolysis. ACS Catalysis, 2015, 5, 5679-5695.	11.2	108
25	A computational and experimental study of anhydrous phosphotungstic acid and its interaction with water molecules. Applied Catalysis A: General, 2003, 256, 51-68.	4.3	100
26	Propane dehydrogenation over supported Pt-Sn nanoparticles. Journal of Catalysis, 2018, 367, 181-193.	6.2	100
27	Anhydrous and Water-Assisted Proton Mobility in Phosphotungstic Acid. Journal of the American Chemical Society, 2005, 127, 5238-5245.	13.7	99
28	Comparative study of CO and CO2 hydrogenation over supported Rhâ€“Fe catalysts. Catalysis Communications, 2010, 11, 901-906.	3.3	99
29	Influence of water on the activity and stability of activated MgAl hydrotalcites for the transesterification of tributyrin with methanol. Journal of Catalysis, 2008, 254, 190-197.	6.2	98
30	Isotopic transient analysis of the ethanol coupling reaction over magnesia. Journal of Catalysis, 2013, 298, 130-137.	6.2	95
31	Multiproduct Steady-State Isotopic Transient Kinetic Analysis of the Ethanol Coupling Reaction over Hydroxyapatite and Magnesia. ACS Catalysis, 2015, 5, 1737-1746.	11.2	93
32	Influence of Reaction Conditions on Diacid Formation During Au-Catalyzed Oxidation of Glycerol and Hydroxymethylfurfural. Topics in Catalysis, 2012, 55, 24-32.	2.8	91
33	Kinetics and mechanism of 5-hydroxymethylfurfural oxidation and their implications for catalyst development. Journal of Molecular Catalysis A, 2014, 388-389, 123-132.	4.8	89
34	Formation and Oxidation/Gasification of Carbonaceous Deposits: A Review. Industrial & Engineering Chemistry Research, 2016, 55, 9760-9818.	3.7	82
35	Structure of Supported PdAu Clusters Determined by X-ray Absorption Spectroscopy. The Journal of Physical Chemistry, 1994, 98, 5471-5477.	2.9	79
36	Selective Aerobic Oxidation of Alcohols over Atomicallyâ€Dispersed Nonâ€Precious Metal Catalysts. ChemSusChem, 2017, 10, 359-362.	6.8	79

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37	Influence of surface acid and base sites on the Guerbet coupling of ethanol to butanol over metal phosphate catalysts. Journal of Catalysis, 2017, 352, 182-190.	6.2	76
38	Inhibition of gold and platinum catalysts by reactive intermediates produced in the selective oxidation of alcohols in liquid water. Green Chemistry, 2011, 13, 3484.	9.0	75
39	Insights into the Speciation of Cu in the Cu-H-Mordenite Catalyst for the Oxidation of Methane to Methanol. ACS Catalysis, 2019, 9, 5308-5319.	11.2	70
40	DRIFTS of Probe Molecules Adsorbed on Magnesia, Zirconia, and Hydroxyapatite Catalysts. Journal of Physical Chemistry C, 2015, 119, 9186-9197.	3.1	68
41	Decarbonylation of heptanoic acid over carbon-supported platinum nanoparticles. Green Chemistry, 2014, 16, 683-694.	9.0	66
42	Sodium modification of zirconia catalysts for ethanol coupling to 1-butanol. Journal of Energy Chemistry, 2013, 22, 58-64.	12.9	65
43	Influence of Dihydrogen and Water Vapor on the Kinetics of CO Oxidation over Au/Al2O3. Industrial & Engineering Chemistry Research, 2005, 44, 5403-5410.	3.7	64
44	On the Superacidity of Sulfated Zirconia Catalysts for Low-Temperature Isomerization of Butane. Journal of the American Chemical Society, 1996, 118, 12240-12241.	13.7	63
45	Synthesis of methacrylic acid by aldol condensation of propionic acid with formaldehyde over acidâ€“base bifunctional catalysts. Catalysis Today, 2007, 123, 42-49.	4.4	63
46	Atomically Dispersed Co and Cu on N-Doped Carbon for Reactions Involving Câ€“H Activation. ACS Catalysis, 2018, 8, 3875-3884.	11.2	63
47	Structure of Fe, Mn-promoted sulfated zirconia catalyst by X-ray and IR absorption spectroscopies. Journal of the Chemical Society, Faraday Transactions, 1995, 91, 1825-1833.	1.7	61
48	Oxygen-exchange reactions during CO oxidation over titania- and alumina-supported Au nanoparticles. Journal of Catalysis, 2006, 241, 407-416.	6.2	61
49	On the deactivation of supported platinum catalysts for selective oxidation of alcohols. Journal of Catalysis, 2014, 311, 295-305.	6.2	61
50	Probing the Basic Character of Alkali-Modified Zeolites by CO2 Adsorption Microcalorimetry, Butene Isomerization, and Toluene Alkylation with Ethylene. Journal of Catalysis, 2000, 189, 79-90.	6.2	59
51	Effect of water on silica-supported phosphotungstic acid catalysts for 1-butene double bond shift and alkane skeletal isomerization. Applied Catalysis A: General, 2000, 200, 219-231.	4.3	58
52	Origins of Unusual Alcohol Selectivities over Mixed MgAl Oxide-Supported K/MoS₂ Catalysts for Higher Alcohol Synthesis from Syngas. ACS Catalysis, 2013, 3, 1665-1675.	11.2	58
53	Selective production of 1,2-propanediol by hydrogenolysis of glycerol over bimetallic Ruâ€“Cu nanoparticles supported on TiO2. Applied Catalysis A: General, 2014, 482, 137-144.	4.3	57
54	Investigation of Alumina-Supported Au Catalyst for CO Oxidation by Isotopic Transient Analysis and X-ray Absorption Spectroscopyâ€. Journal of Physical Chemistry B, 2005, 109, 2307-2314.	2.6	51

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55	A study of glycerol hydrogenolysis over Ruâ€“Cu/Al2O3 and Ruâ€“Cu/ZrO2 catalysts. Journal of Molecular Catalysis A, 2016, 415, 27-36.	4.8	50
56	Reactivity and in situ X-ray absorption spectroscopy of Rb-promoted Mo2C/MgO catalysts for higher alcohol synthesis. Journal of Catalysis, 2011, 282, 83-93.	6.2	49
57	Title is missing!. Topics in Catalysis, 1998, 6, 77-86.	2.8	44
58	Influence of Reactor Configuration on the Selective Oxidation of Glycerol over Au/TiO2. Topics in Catalysis, 2009, 52, 269-277.	2.8	44
59	Xâ€ray Absorption Spectroscopy of an Feâ€Promoted Rh/TiO₂ Catalyst for Synthesis of Ethanol from Synthesis Gas. ChemCatChem, 2009, 1, 295-303.	3.7	43
60	Adsorption of N2and CO2on Zeolite X Exchanged with Potassium, Barium, or Lanthanum. Langmuir, 2003, 19, 4707-4713.	3.5	42
61	Influence of textural properties and trace water on the reactivity and deactivation of reconstructed layered hydroxide catalysts for transesterification of tributyrin with methanol. Journal of Catalysis, 2009, 268, 307-317.	6.2	41
62	Characterization of magnesium-aluminum mixed oxides by temperature-programmed reaction of 2-propanol. Langmuir, 1994, 10, 159-165.	3.5	40
63	A Quantum Chemical Study of the Decomposition of Keggin-Structured Heteropolyacids. Journal of Physical Chemistry B, 2006, 110, 4170-4178.	2.6	37
64	Hydrocarbon oxidation and aldol condensation over basic zeolite catalysts. Catalysis Today, 2006, 116, 226-233.	4.4	37
65	A First Principles Analysis of the Location and Affinity of Protons in the Secondary Structure of Phosphotungstic Acid. Journal of Physical Chemistry B, 2004, 108, 12292-12300.	2.6	36
66	Influence of Passivation on the Reactivity of Unpromoted and Rb-Promoted Mo₂C Nanoparticles for CO Hydrogenation. ACS Catalysis, 2012, 2, 1408-1416.	11.2	36
67	Mechanistic Studies of Single-Step Styrene Production Using a Rhodium(I) Catalyst. Journal of the American Chemical Society, 2017, 139, 1485-1498.	13.7	36
68	Perspectives on the kinetics of diol oxidation over supported platinum catalysts in aqueous solution. Journal of Catalysis, 2013, 308, 50-59.	6.2	34
69	Hydrogen transfer reactions relevant to Guerbet coupling of alcohols over hydroxyapatite and magnesium oxide catalysts. Catalysis Science and Technology, 2018, 8, 1722-1729.	4.1	34
70	Deactivation of Supported Pt Catalysts during Alcohol Oxidation Elucidated by Spectroscopic and Kinetic Analyses. ACS Catalysis, 2017, 7, 6745-6756.	11.2	33
71	X-ray and IR Spectroscopy of Barium-Promoted, Zeolite-Supported Ruthenium Catalysts for Ammonia Synthesis. Journal of Physical Chemistry B, 2001, 105, 7525-7532.	2.6	32
72	X-ray absorption spectroscopy and CO oxidation activity of Au/Al2O3 treated with NaCN. Catalysis Letters, 2005, 99, 21-26.	2.6	31

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73	Mixed MgAl Oxide Supported Potassium Promoted Molybdenum Sulfide as a Selective Catalyst for Higher Alcohol Synthesis from Syngas. Catalysis Letters, 2012, 142, 875-881.	2.6	31
74	Effect of the Co-cation on Cu Speciation in Cu-Exchanged Mordenite and ZSM-5 Catalysts for the Oxidation of Methane to Methanol. ACS Catalysis, 2021, 11, 4973-4987.	11.2	31
75	Multi-product steady-state isotopic transient kinetic analysis of CO hydrogenation over supported molybdenum carbide. Journal of Catalysis, 2013, 306, 91-99.	6.2	30
76	Importance of Product Readsorption during Isotopic Transient Analysis of Ammonia Synthesis on Ba-Promoted Ru/BaX Catalyst. Journal of Catalysis, 2002, 211, 379-386.	6.2	27
77	Lanthanum Promotion of Ru/Zeolite X Catalysts for Ammonia Synthesis. Catalysis Letters, 2002, 81, 265-269.	2.6	27
78	On the use of 1-butene double-bond isomerization as a probe reaction on cesium-loaded zeolite X. Applied Catalysis A: General, 2003, 239, 59-70.	4.3	27
79	Transesterification of tributyrin with methanol over basic Mg:Zr mixed oxide catalysts. Applied Catalysis B: Environmental, 2010, 96, 508-515.	20.2	27
80	Conversion of n-hexane and n-dodecane over H-ZSM-5, H-Y and Al-MCM-41 at supercritical conditions. Applied Catalysis A: General, 2017, 546, 149-158.	4.3	27
81	Use of catalytic reactions to probe Mg-Al mixed oxide surfaces. Catalysis Letters, 1994, 25, 87-95.	2.6	26
82	Intercalation of Ethylene Glycol into Yttrium Hydroxide Layered Materials. Inorganic Chemistry, 2010, 49, 3888-3895.	4.0	26
83	Influence of the Precipitation Method on Acidâ€“Baseâ€Catalyzed Reactions over Mgâ€“Zr Mixed Oxides. ChemCatChem, 2013, 5, 1989-1997.	3.7	26
84	Ammonia Adsorption on Keggin-Type Heteropolyacid Catalysts Explored by Density Functional Quantum Chemistry Calculations. Journal of Physical Chemistry B, 2000, 104, 3556-3562.	2.6	25
85	Adsorption of CO2on Model Surfaces of Cesium Oxides Determined from First Principles. Journal of Physical Chemistry B, 2004, 108, 16798-16805.	2.6	25
86	Ab Initio and Microcalorimetric Investigations of Alkene Adsorption on Phosphotungstic Acid. Langmuir, 2005, 21, 4738-4745.	3.5	25
87	Isotopic Transient Analysis of Ammonia Synthesis over Ba or Cs-Promoted Ru/Carbon Catalysts. Catalysis Letters, 2004, 93, 61-65.	2.6	24
88	Catalytic oxidation of solid carbon and carbon monoxide over ceriumâ€zirconium mixed oxides. AICHE Journal, 2017, 63, 725-738.	3.6	23
89	Mechanistic Studies of Single-Step Styrene Production Catalyzed by Rh Complexes with Diimine Ligands: An Evaluation of the Role of Ligands and Induction Period. ACS Catalysis, 2019, 9, 7457-7475.	11.2	23
90	Use of infrared spectroscopy and density functional theory to study the influence of rubidium on alumina-supported molybdenum carbide catalyst for higher alcohol synthesis from syngas. Journal of Catalysis, 2013, 299, 150-161.	6.2	22

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91	Importance of Product Readsorption during Isotopic Transient Analysis of Ammonia Synthesis on Ba-Promoted Ru/BaX Catalyst. Journal of Catalysis, 2002, 211, 379-386.	6.2	21
92	Reactivity and stability of supported Pd nanoparticles during the liquid-phase and gas-phase decarbonylation of heptanoic acid. Applied Catalysis A: General, 2015, 504, 295-307.	4.3	21
93	Influence of Dioxygen on the Promotional Effect of Bi during Pt-Catalyzed Oxidation of 1,6-Hexanediol. ACS Catalysis, 2016, 6, 4206-4217.	11.2	21
94	Reaction Kinetics and Mechanism for the Catalytic Reduction of Propionic Acid over Supported ReO_x Promoted by Pd. ACS Catalysis, 2021, 11, 1435-1455.	11.2	21
95	Turnover rates on complex heterogeneous catalysts. AICHE Journal, 2018, 64, 3778-3785.	3.6	20
96	In Situ Generation of Radical Coke and the Role of Coke-Catalyst Contact on Coke Oxidation. Industrial & Engineering Chemistry Research, 2016, 55, 5271-5278.	3.7	19
97	Aqueousâ€Phase Hydrogenation of Saturated and Unsaturated Ketones and Aldehydes over Supported Platinumâ€“Rhenium Catalysts. ChemCatChem, 2016, 8, 1074-1083.	3.7	18
98	Restructuring of supported PtSn bimetallic catalysts during aqueous phase oxidation of 1,6-hexanediol. Journal of Catalysis, 2015, 332, 38-50.	6.2	17
99	Vapor phase deoxygenation of heptanoic acid over silica-supported palladium and palladium-tin catalysts. Journal of Catalysis, 2016, 344, 202-212.	6.2	17
100	Computational and Experimental Mechanistic Insights into the Ethanol-to-Butanol Upgrading Reaction over MgO. ACS Catalysis, 2020, 10, 15162-15177.	11.2	16
101	Structure of Pd/CeOx/Al2O3Catalysts for NOxReduction Determined By in Situ X-ray Absorption Spectroscopy. Journal of Physical Chemistry B, 2000, 104, 9653-9660.	2.6	14
102	Rapid, cost-effective DNA quantification via a visually-detectable aggregation of superparamagnetic silica-magnetite nanoparticles. Nano Research, 2014, 7, 755-764.	10.4	14
103	Reduction of Propionic Acid over a Pd-Promoted ReO_x/SiO₂ Catalyst Probed by X-ray Absorption Spectroscopy and Transient Kinetic Analysis. ACS Sustainable Chemistry and Engineering, 2018, 6, 12353-12366.	6.7	14
104	Supported K/MoS2 and K/Mo2C Catalysts for Higher Alcohol Synthesis from Synthesis Gas: Impact of Molybdenum Precursor and Metal Oxide Support on Activity and Selectivity. Catalysis Letters, 2014, 144, 825-830.	2.6	13
105	Catalytic reactions of coke with dioxygen and steam over alkaline-earth-metal-doped cerium-zirconium mixed oxides. Applied Catalysis A: General, 2017, 535, 17-23.	4.3	13
106	Influence of Cobalt on Rubidium-Promoted Alumina-Supported Molybdenum Carbide Catalysts for Higher Alcohol Synthesis from Syngas. Topics in Catalysis, 2013, 56, 1740-1751.	2.8	12
107	Glycerol-Intercalated Mg-Al Hydrotalcite as a Potential Solid Base Catalyst for Transesterification. Clays and Clay Minerals, 2010, 58, 475-485.	1.3	11
108	Raman Spectroscopy and Dioxygen Adsorption on Cs-Loaded Zeolite Catalysts for Butene Isomerization. Journal of Physical Chemistry B, 2005, 109, 7141-7148.	2.6	10

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109	Ru Promoted MgO and Al-Modified MgO for Ethanol Upgrading. Topics in Catalysis, 2019, 62, 894-907.	2.8	10
110	Steam reforming of ethylene over nickel based spinel oxides. Applied Catalysis A: General, 2020, 603, 117739.	4.3	10
111	Thermally stable Î±-alumina supported ceria for coking resistance and oxidation of radical coke generated in-situ. Fuel, 2018, 218, 357-365.	6.4	9
112	Steam reforming of ethylene over manganese-chromium spinel oxides. Journal of Catalysis, 2019, 380, 224-235.	6.2	9
113	Oxidative Alkenylation of Arenes Using Supported Rh Materials: Evidence that Active Catalysts are Formed by Rh Leaching. ChemCatChem, 2021, 13, 260-270.	3.7	9
114	Î±-Alumina supported doped ceria catalysts for steam gasification and oxidation of radical coke. Chemical Engineering Research and Design, 2019, 151, 1-9.	5.6	8
115	Cascade Reaction of Ethanol to Butadiene over Multifunctional Silica-Supported Ag and ZrO₂ Catalysts. ACS Sustainable Chemistry and Engineering, 2022, 10, 1020-1035.	6.7	8
116	Use of kinetic models to explore the role of base promoters on Ru/MgO ammonia synthesis catalysts. Journal of Catalysis, 2004, 225, 359-359.	6.2	7
117	Gasification of Radical Coke with Steam and Steamâ€“Hydrogen Mixtures over Manganeseâ€“Chromium Oxides. Industrial & Engineering Chemistry Research, 2020, 59, 10813-10822.	3.7	7
118	High-throughput operando-ready X-ray absorption spectroscopy flow reactor cell for powder samples. Review of Scientific Instruments, 2020, 91, 013107.	1.3	7
119	Oxidation of H2and CO over Ion-Exchanged X and Y Zeolites. Journal of the American Chemical Society, 2007, 129, 3420-3425.	13.7	6
120	Understanding Catalysis Through Characterization and Synthesis of Catalysts: Gabor A. Somorjai Award and Symposium for Creative Research 2011. Topics in Catalysis, 2012, 55, 1-2.	2.8	6
121	Enhanced Coke Gasification Activity of the Mn_{1.5}Cr_{1.5}O₄ Spinel Catalyst during Coking in Ethyleneâ€“Steam Mixtures. Energy & Fuels, 2021, 35, 5271-5280.	5.1	5
122	Steam reforming kinetics of olefins and aromatics over Mn-Cr-O spinel oxides. Journal of Catalysis, 2021, 404, 964-976.	6.2	4
123	Reduction of Propanoic Acid over Pdâ€Promoted Supported WO x Catalysts. ChemCatChem, 2020, 12, 314-325.	3.7	3
124	Calcium Phosphate Catalysts for Ethanol Coupling to Butanol and Butadiene. Catalysis Letters, 2021, 151, 648-657.	2.6	2
125	Influence of Co on Ethylene Steam Reforming Over Coâ€“Crâ€“O Spinel Catalysts. Catalysis Letters, 2021, 151, 1456-1466.	2.6	1
126	Anticoking Performance of Electrodeposited Mn/MnO Surface Coating on Feâ€“Niâ€“Cr Alloy during Steam Cracking. ACS Engineering Au, 2021, 1, 73-84.	5.1	1

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127	Basic Nanostructured Catalysts. , 2008, , 278-287.		0
128	Selective Oxidation/Dehydrogenation Reactions. Springer Briefs in Molecular Science, 2013, , 11-31.	0.1	0
129	Gold Catalysts Stability. Springer Briefs in Molecular Science, 2013, , 47-49.	0.1	0