

Ayman M Karim

List of Publications by Year in descending order

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65
papers

5,428
citations

108046

37
h-index

124990

64
g-index

67
all docs

67
docs citations

67
times ranked

7803
citing authors

#	ARTICLE	IF	CITATIONS
1	Catalytic fast pyrolysis of lignocellulosic biomass. <i>Chemical Society Reviews</i> , 2014, 43, 7594-7623.	18.7	864
2	Carbon-supported bimetallic Pd-Fe catalysts for vapor-phase hydrodeoxygenation of guaiacol. <i>Journal of Catalysis</i> , 2013, 306, 47-57.	3.1	384
3	Correlating Particle Size and Shape of Supported Ru/Al ₂ O ₃ Catalysts with NH ₃ Decomposition Activity. <i>Journal of the American Chemical Society</i> , 2009, 131, 12230-12239.	6.6	279
4	Identification of the active complex for CO oxidation over single-atom Ir-on-MgAl ₂ O ₄ catalysts. <i>Nature Catalysis</i> , 2019, 2, 149-156.	16.1	222
5	Molecular structure and stability of dissolved lithium polysulfide species. <i>Physical Chemistry Chemical Physics</i> , 2014, 16, 10923-10932.	1.3	210
6	Aqueous phase reforming of glycerol for hydrogen production over Pt-Re supported on carbon. <i>Applied Catalysis B: Environmental</i> , 2010, 99, 206-213.	10.8	193
7	Stability of bimetallic Pd-Zn catalysts for the steam reforming of methanol. <i>Journal of Catalysis</i> , 2008, 257, 64-70.	3.1	174
8	Synergistic Catalysis between Pd and Fe in Gas Phase Hydrodeoxygenation of <i>m</i> -Cresol. <i>ACS Catalysis</i> , 2014, 4, 3335-3345.	5.5	173
9	Comparison of wall-coated and packed-bed reactors for steam reforming of methanol. <i>Catalysis Today</i> , 2005, 110, 86-91.	2.2	162
10	The role of PdZn alloy formation and particle size on the selectivity for steam reforming of methanol. <i>Journal of Catalysis</i> , 2006, 243, 420-427.	3.1	146
11	Colloidal nanoparticle size control: experimental and kinetic modeling investigation of the ligand-metal binding role in controlling the nucleation and growth kinetics. <i>Nanoscale</i> , 2017, 9, 13772-13785.	2.8	137
12	The Role of Ru and RuO ₂ in the Catalytic Transfer Hydrogenation of 5-Hydroxymethylfurfural for the Production of 2,5-Dimethylfuran. <i>ChemCatChem</i> , 2014, 6, 848-856.	1.8	136
13	Wall coating of a CuO/ZnO/Al ₂ O ₃ methanol steam reforming catalyst for micro-channel reformers. <i>Chemical Engineering Journal</i> , 2004, 101, 113-121.	6.6	123
14	Correlation of Pt-Re surface properties with reaction pathways for the aqueous-phase reforming of glycerol. <i>Journal of Catalysis</i> , 2012, 287, 37-43.	3.1	118
15	Structure Sensitivity of Acetylene Semi-Hydrogenation on Pt Single Atoms and Subnanometer Clusters. <i>ACS Catalysis</i> , 2019, 9, 11030-11041.	5.5	111
16	Nonisothermality in packed bed reactors for steam reforming of methanol. <i>Applied Catalysis A: General</i> , 2005, 282, 101-109.	2.2	110
17	Effect of Pd Coordination and Isolation on the Catalytic Reduction of O ₂ to H ₂ O ₂ over PdAu Bimetallic Nanoparticles. <i>Journal of the American Chemical Society</i> , 2021, 143, 5445-5464.	6.6	101
18	Catalytic Roles of Co ⁰ and Co ²⁺ during Steam Reforming of Ethanol on Co/MgO Catalysts. <i>ACS Catalysis</i> , 2011, 1, 279-286.	5.5	98

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19	Portable power production from methanol in an integrated thermoelectric/microreactor system. <i>Journal of Power Sources</i> , 2008, 179, 113-120.	4.0	91
20	Solvent molecules form surface redox mediators in situ and cocatalyze O ₂ reduction on Pd. <i>Science</i> , 2021, 371, 626-632.	6.0	84
21	Correlating Ethylene Glycol Reforming Activity with In Situ EXAFS Detection of Ni Segregation in Supported NiPt Bimetallic Catalysts. <i>ACS Catalysis</i> , 2012, 2, 2290-2296.	5.5	80
22	A comparative study between Co and Rh for steam reforming of ethanol. <i>Applied Catalysis B: Environmental</i> , 2010, 96, 441-448.	10.8	77
23	Improved selectivity of carbon-supported palladium catalysts for the hydrogenation of acetylene in excess ethylene. <i>Applied Catalysis A: General</i> , 2014, 482, 108-115.	2.2	72
24	Assessment of Overall Rate Expressions and Multiscale, Microkinetic Model Uniqueness via Experimental Data Injection: Ammonia Decomposition on Ru/β-Al ₂ O ₃ for Hydrogen Production. <i>Industrial & Engineering Chemistry Research</i> , 2009, 48, 5255-5265.	1.8	69
25	Environmental Transmission Electron Microscopy Study of the Origins of Anomalous Particle Size Distributions in Supported Metal Catalysts. <i>ACS Catalysis</i> , 2012, 2, 2349-2356.	5.5	68
26	New insights into reaction mechanisms of ethanol steam reforming on Co/ZrO ₂ . <i>Applied Catalysis B: Environmental</i> , 2015, 162, 141-148.	10.8	67
27	Density Functional Theory Study of Acetaldehyde Hydrodeoxygenation on MoO ₃ . <i>Journal of Physical Chemistry C</i> , 2011, 115, 8155-8164.	1.5	64
28	Controlling ZnO morphology for improved methanol steam reforming reactivity. <i>Physical Chemistry Chemical Physics</i> , 2008, 10, 5584.	1.3	63
29	Synthesis of 1 nm Pd Nanoparticles in a Microfluidic Reactor: Insights from in Situ X-ray Absorption Fine Structure Spectroscopy and Small-Angle X-ray Scattering. <i>Journal of Physical Chemistry C</i> , 2015, 119, 13257-13267.	1.5	61
30	The role of nanoparticle size and ligand coverage in size focusing of colloidal metal nanoparticles. <i>Nanoscale Advances</i> , 2019, 1, 4052-4066.	2.2	61
31	Rh promoted In ₂ O ₃ as a highly active catalyst for CO ₂ hydrogenation to methanol. <i>Catalysis Science and Technology</i> , 2020, 10, 8196-8202.	2.1	60
32	Unraveling the Intermediate Reaction Complexes and Critical Role of Support-Derived Oxygen Atoms in CO Oxidation on Single-Atom Pt/CeO ₂ . <i>ACS Catalysis</i> , 2021, 11, 8701-8715.	5.5	51
33	A versatile approach for quantification of surface site fractions using reaction kinetics: The case of CO oxidation on supported Ir single atoms and nanoparticles. <i>Journal of Catalysis</i> , 2019, 378, 121-130.	3.1	49
34	In Situ X-ray Absorption Fine Structure Studies on the Effect of pH on Pt Electronic Density during Aqueous Phase Reforming of Glycerol. <i>ACS Catalysis</i> , 2012, 2, 2387-2394.	5.5	47
35	Gaining Control over Radiolytic Synthesis of Uniform Sub-3-nanometer Palladium Nanoparticles: Use of Aromatic Liquids in the Electron Microscope. <i>Langmuir</i> , 2016, 32, 1468-1477.	1.6	47
36	Elucidation of the roles of Re in steam reforming of glycerol over Pt-Re/C catalysts. <i>Journal of Catalysis</i> , 2015, 322, 49-59.	3.1	45

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37	Origin of the High CO Oxidation Activity on CeO ₂ Supported Pt Nanoparticles: Weaker Binding of CO or Facile Oxygen Transfer from the Support?. ChemCatChem, 2020, 12, 1726-1733.	1.8	44
38	The Effect of Zinc Addition on the Oxidation State of Cobalt in Co/ZrO ₂ Catalysts. ChemSusChem, 2011, 4, 1679-1684.	3.6	36
39	Minimizing the Formation of Coke and Methane on Co Nanoparticles in Steam Reforming of Biomass-Derived Oxygenates. ChemCatChem, 2013, 5, 1299-1303.	1.8	34
40	Vapor Phase Ketonization of Acetic Acid on Ceria Based Metal Oxides. Topics in Catalysis, 2013, 56, 1782-1789.	1.3	33
41	High throughput multiscale modeling for design of experiments, catalysts, and reactors: Application to hydrogen production from ammonia. Chemical Engineering Science, 2010, 65, 240-246.	1.9	31
42	Elucidation of the Roles of Re in Aqueous-Phase Reforming of Glycerol over Pt-Re/C Catalysts. ACS Catalysis, 2015, 5, 7312-7320.	5.5	30
43	Coating of steam reforming catalysts in non-porous multi-channeled microreactors. Catalysis Today, 2007, 125, 11-15.	2.2	25
44	Synthesis and Activity of Heterogeneous Pd/Al ₂ O ₃ and Pd/ZnO Catalysts Prepared from Colloidal Palladium Nanoparticles. Topics in Catalysis, 2008, 49, 227-232.	1.3	25
45	The effect of ZnO addition on Co/C catalyst for vapor and aqueous phase reforming of ethanol. Catalysis Today, 2014, 233, 38-45.	2.2	25
46	Wall coating behavior of catalyst slurries in non-porous ceramic microstructures. Chemical Engineering Science, 2006, 61, 5678-5685.	1.9	21
47	Aqueous phase hydrodeoxygenation of polyols over Pd/WO ₃ -ZrO ₂ : Role of Pd-WO ₃ interaction and hydrodeoxygenation pathway. Catalysis Today, 2016, 269, 103-109.	2.2	20
48	Palladium Acetate Trimer: Understanding Its Ligand-Induced Dissociation Thermochemistry Using Isothermal Titration Calorimetry, X-ray Absorption Fine Structure, and ³¹ P Nuclear Magnetic Resonance. Organometallics, 2019, 38, 451-460.	1.1	20
49	18.1% single palladium atom catalysts on mesoporous covalent organic framework for gas phase hydrogenation of ethylene. Cell Reports Physical Science, 2021, 2, 100495.	2.8	19
50	Solvent manipulation of the pre-reduction metal-ligand complex and particle-ligand binding for controlled synthesis of Pd nanoparticles. Nanoscale, 2021, 13, 206-217.	2.8	18
51	On the Reaction Mechanism of Acetaldehyde Decomposition on Mo(110). ACS Catalysis, 2012, 2, 468-478.	5.5	16
52	General Method for Determination of the Surface Composition in Bimetallic Nanoparticle Catalysts from the L Edge X-ray Absorption Near-Edge Spectra. ACS Catalysis, 2012, 2, 2433-2443.	5.5	16
53	Advantages of MgAlO ₂ over γ -Al ₂ O ₃ as a Support Material for Potassium-Based High-Temperature Lean NO _x Traps. ACS Catalysis, 2015, 5, 4680-4689.	5.5	15
54	Ligand-Mediated Nucleation and Growth of Palladium Metal Nanoparticles. Journal of Visualized Experiments, 2018, , .	0.2	14

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55	Reduction and Agglomeration of Supported Metal Clusters Induced by High-Flux X-ray Absorption Spectroscopy Measurements. <i>Journal of Physical Chemistry C</i> , 2021, 125, 11048-11057.	1.5	13
56	Catalytic CO Oxidation on MgAl ₂ O ₄ -Supported Iridium Single Atoms: Ligand Configuration and Site Geometry. <i>Journal of Physical Chemistry C</i> , 2021, 125, 11380-11390.	1.5	13
57	Role of tungsten in the aqueous phase hydrodeoxygenation of ethylene glycol on tungstated zirconia supported palladium. <i>Catalysis Today</i> , 2014, 237, 118-124.	2.2	11
58	Structure sensitivity of n-butane hydrogenolysis on supported Ir catalysts. <i>Journal of Catalysis</i> , 2021, 394, 376-386.	3.1	11
59	H ₂ O-assisted O ₂ reduction by H ₂ on Pt and PtAu bimetallic nanoparticles: Influences of composition and reactant coverages on kinetic regimes, rates, and selectivities. <i>Journal of Catalysis</i> , 2021, 404, 661-678.	3.1	11
60	Core-Shell Nanocatalyst Design by Combining High-Throughput Experiments and First-Principles Simulations. <i>ChemCatChem</i> , 2013, 5, 3712-3718.	1.8	8
61	Hierarchically structured catalysts for cascade and selective steam reforming/hydrodeoxygenation reactions. <i>Chemical Communications</i> , 2015, 51, 16617-16620.	2.2	8
62	Aqueous-Phase Destruction of Nerve-Agent Simulants at Copper Single Atoms in UiO-66. <i>Inorganic Chemistry</i> , 2022, 61, 8585-8591.	1.9	5
63	CO oxidation on MgAl ₂ O ₄ supported Ir _n : activation of lattice oxygen in the subnanometer regime and emergence of nuclearity-activity volcano. <i>Journal of Materials Chemistry A</i> , 2022, 10, 4266-4278.	5.2	4
64	Kinetic Synergy between Supported Ir Single Atoms and Nanoparticles during CO Oxidation Light-Off. <i>Industrial & Engineering Chemistry Research</i> , 2021, 60, 15960-15971.	1.8	3
65	Syngas Conditioning. , 2011, , 361-408.		2