

# 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	CO oxidation on MgAl <sub>2</sub> O <sub>4</sub> supported Ir <sub>n</sub> : activation of lattice oxygen in the subnanometer regime and emergence of nuclearity-activity volcano. Journal of Materials Chemistry A, 2022, 10, 4266-4278.	5.2	4
2	Aqueous-Phase Destruction of Nerve-Agent Simulants at Copper Single Atoms in UiO-66. Inorganic Chemistry, 2022, 61, 8585-8591.	1.9	5
3	Structure sensitivity of n-butane hydrogenolysis on supported Ir catalysts. Journal of Catalysis, 2021, 394, 376-386.	3.1	11
4	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
5	Solvent molecules form surface redox mediators in situ and cocatalyze O <sub>2</sub> reduction on Pd. Science, 2021, 371, 626-632.	6.0	84
6	Effect of Pd Coordination and Isolation on the Catalytic Reduction of O <sub>2</sub> to H <sub>2</sub> O over PdAu Bimetallic Nanoparticles. Journal of the American Chemical Society, 2021, 143, 5445-5464.	6.6	101
7	Reduction and Agglomeration of Supported Metal Clusters Induced by High-Flux X-ray Absorption Spectroscopy Measurements. Journal of Physical Chemistry C, 2021, 125, 11048-11057.	1.5	13
8	Catalytic CO Oxidation on MgAl <sub>2</sub> O <sub>4</sub> -Supported Iridium Single Atoms: Ligand Configuration and Site Geometry. Journal of Physical Chemistry C, 2021, 125, 11380-11390.	1.5	13
9	Unraveling the Intermediate Reaction Complexes and Critical Role of Support-Derived Oxygen Atoms in CO Oxidation on Single-Atom Pt/CeO <sub>2</sub> . ACS Catalysis, 2021, 11, 8701-8715.	5.5	51
10	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
11	H <sub>2</sub> O-assisted O <sub>2</sub> reduction by H <sub>2</sub> on Pt and PtAu bimetallic nanoparticles: Influences of composition and reactant coverages on kinetic regimes, rates, and selectivities. Journal of Catalysis, 2021, 404, 661-678.	3.1	11
12	Kinetic Synergy between Supported Ir Single Atoms and Nanoparticles during CO Oxidation Light-Off. Industrial & Engineering Chemistry Research, 2021, 60, 15960-15971.	1.8	3
13	Origin of the High CO Oxidation Activity on CeO <sub>2</sub> Supported Pt Nanoparticles: Weaker Binding of CO or Facile Oxygen Transfer from the Support?. ChemCatChem, 2020, 12, 1726-1733.	1.8	44
14	Rh promoted In <sub>2</sub> O <sub>3</sub> as a highly active catalyst for CO <sub>2</sub> hydrogenation to methanol. Catalysis Science and Technology, 2020, 10, 8196-8202.	2.1	60
15	Structure Sensitivity of Acetylene Semi-Hydrogenation on Pt Single Atoms and Subnanometer Clusters. ACS Catalysis, 2019, 9, 11030-11041.	5.5	111
16	A versatile approach for quantification of surface site fractions using reaction kinetics: The case of CO oxidation on supported Ir single atoms and nanoparticles. Journal of Catalysis, 2019, 378, 121-130.	3.1	49
17	The role of nanoparticle size and ligand coverage in size focusing of colloidal metal nanoparticles. Nanoscale Advances, 2019, 1, 4052-4066.	2.2	61
18	Palladium Acetate Trimer: Understanding Its Ligand-Induced Dissociation Thermochemistry Using Isothermal Titration Calorimetry, X-ray Absorption Fine Structure, and <sup>31</sup> P Nuclear Magnetic Resonance. Organometallics, 2019, 38, 451-460.	1.1	20

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19	Identification of the active complex for CO oxidation over single-atom Ir-on-MgAl <sub>2</sub> O <sub>4</sub> catalysts. <i>Nature Catalysis</i> , 2019, 2, 149-156.	16.1	222
20	Ligand-Mediated Nucleation and Growth of Palladium Metal Nanoparticles. <i>Journal of Visualized Experiments</i> , 2018, . .	0.2	14
21	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
22	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
23	Aqueous phase hydrodeoxygenation of polyols over Pd/WO <sub>3</sub> -ZrO <sub>2</sub> : Role of Pd-WO <sub>3</sub> interaction and hydrodeoxygenation pathway. <i>Catalysis Today</i> , 2016, 269, 103-109.	2.2	20
24	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
25	New insights into reaction mechanisms of ethanol steam reforming on Co-ZrO <sub>2</sub> . <i>Applied Catalysis B: Environmental</i> , 2015, 162, 141-148.	10.8	67
26	Advantages of MgAl <sub>2</sub> O <sub>4</sub> over γ-Al <sub>2</sub> O <sub>3</sub> as a Support Material for Potassium-Based High-Temperature Lean NO <sub>x</sub> Traps. <i>ACS Catalysis</i> , 2015, 5, 4680-4689.	5.5	15
27	Elucidation of the Roles of Re in Aqueous-Phase Reforming of Glycerol over Pt-Re/C Catalysts. <i>ACS Catalysis</i> , 2015, 5, 7312-7320.	5.5	30
28	Hierarchically structured catalysts for cascade and selective steam reforming/hydrodeoxygenation reactions. <i>Chemical Communications</i> , 2015, 51, 16617-16620.	2.2	8
29	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
30	The Role of Ru and RuO <sub>2</sub> 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
31	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
32	Catalytic fast pyrolysis of lignocellulosic biomass. <i>Chemical Society Reviews</i> , 2014, 43, 7594-7623.	18.7	864
33	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
34	Molecular structure and stability of dissolved lithium polysulfide species. <i>Physical Chemistry Chemical Physics</i> , 2014, 16, 10923-10932.	1.3	210
35	The effect of ZnO addition on Co/C catalyst for vapor and aqueous phase reforming of ethanol. <i>Catalysis Today</i> , 2014, 233, 38-45.	2.2	25
36	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

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37	Carbon-supported bimetallic Pd–Fe catalysts for vapor-phase hydrodeoxygenation of guaiacol. <i>Journal of Catalysis</i> , 2013, 306, 47-57.	3.1	384
38	Vapor Phase Ketonization of Acetic Acid on Ceria Based Metal Oxides. <i>Topics in Catalysis</i> , 2013, 56, 1782-1789.	1.3	33
39	Core–Shell Nanocatalyst Design by Combining High-Throughput Experiments and First-Principles Simulations. <i>ChemCatChem</i> , 2013, 5, 3712-3718.	1.8	8
40	Minimizing the Formation of Coke and Methane on Co Nanoparticles in Steam Reforming of Biomass-Derived Oxygenates. <i>ChemCatChem</i> , 2013, 5, 1299-1303.	1.8	34
41	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
42	On the Reaction Mechanism of Acetaldehyde Decomposition on Mo(110). <i>ACS Catalysis</i> , 2012, 2, 468-478.	5.5	16
43	General Method for Determination of the Surface Composition in Bimetallic Nanoparticle Catalysts from the L Edge X-ray Absorption Near-Edge Spectra. <i>ACS Catalysis</i> , 2012, 2, 2433-2443.	5.5	16
44	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
45	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
46	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
47	Density Functional Theory Study of Acetaldehyde Hydrodeoxygenation on MoO <sub>3</sub> . <i>Journal of Physical Chemistry C</i> , 2011, 115, 8155-8164.	1.5	64
48	Catalytic Roles of Co <sup>0</sup> and Co <sup>2+</sup> during Steam Reforming of Ethanol on Co/MgO Catalysts. <i>ACS Catalysis</i> , 2011, 1, 279-286.	5.5	98
49	Syngas Conditioning., 2011, , 361-408.		2
50	The Effect of Zinc Addition on the Oxidation State of Cobalt in Co/ZrO <sub>2</sub> Catalysts. <i>ChemSusChem</i> , 2011, 4, 1679-1684.	3.6	36
51	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
52	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
53	High throughput multiscale modeling for design of experiments, catalysts, and reactors: Application to hydrogen production from ammonia. <i>Chemical Engineering Science</i> , 2010, 65, 240-246.	1.9	31
54	Assessment of Overall Rate Expressions and Multiscale, Microkinetic Model Uniqueness via Experimental Data Injection: Ammonia Decomposition on Ru/Al <sub>2</sub> O <sub>3</sub> for Hydrogen Production. <i>Industrial &amp; Engineering Chemistry Research</i> , 2009, 48, 5255-5265.	1.8	69

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55	Correlating Particle Size and Shape of Supported Ru/ $\gamma$ -Al <sub>2</sub> O <sub>3</sub> Catalysts with NH <sub>3</sub> Decomposition Activity. Journal of the American Chemical Society, 2009, 131, 12230-12239.	6.6	279
56	Portable power production from methanol in an integrated thermoelectric/microreactor system. Journal of Power Sources, 2008, 179, 113-120.	4.0	91
57	Synthesis and Activity of Heterogeneous Pd/Al <sub>2</sub> O <sub>3</sub> and Pd/ZnO Catalysts Prepared from Colloidal Palladium Nanoparticles. Topics in Catalysis, 2008, 49, 227-232.	1.3	25
58	Stability of bimetallic Pd-Zn catalysts for the steam reforming of methanol. Journal of Catalysis, 2008, 257, 64-70.	3.1	174
59	Controlling ZnO morphology for improved methanol steam reforming reactivity. Physical Chemistry Chemical Physics, 2008, 10, 5584.	1.3	63
60	Coating of steam reforming catalysts in non-porous multi-channeled microreactors. Catalysis Today, 2007, 125, 11-15.	2.2	25
61	Wall coating behavior of catalyst slurries in non-porous ceramic microstructures. Chemical Engineering Science, 2006, 61, 5678-5685.	1.9	21
62	The role of PdZn alloy formation and particle size on the selectivity for steam reforming of methanol. Journal of Catalysis, 2006, 243, 420-427.	3.1	146
63	Comparison of wall-coated and packed-bed reactors for steam reforming of methanol. Catalysis Today, 2005, 110, 86-91.	2.2	162
64	Nonisothermality in packed bed reactors for steam reforming of methanol. Applied Catalysis A: General, 2005, 282, 101-109.	2.2	110
65	Wall coating of a CuO/ZnO/Al <sub>2</sub> O <sub>3</sub> methanol steam reforming catalyst for micro-channel reformers. Chemical Engineering Journal, 2004, 101, 113-121.	6.6	123