

# Ayman M Karim

## List of Publications by Citations

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63

papers

4,239

citations

33

h-index

65

g-index

67

ext. papers

4,852

ext. citations

9.7

avg, IF

5.5

L-index

#	Paper	IF	Citations
63	Catalytic fast pyrolysis of lignocellulosic biomass. <i>Chemical Society Reviews</i> , <b>2014</b> , 43, 7594-623	58.5	696
62	Carbon-supported bimetallic PdRe catalysts for vapor-phase hydrodeoxygenation of guaiacol. <i>Journal of Catalysis</i> , <b>2013</b> , 306, 47-57	7.3	319
61	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. <i>Journal of the American Chemical Society</i> , <b>2009</b> , 131, 12230-9	16.4	218
60	Molecular structure and stability of dissolved lithium polysulfide species. <i>Physical Chemistry Chemical Physics</i> , <b>2014</b> , 16, 10923-32	3.6	177
59	Aqueous phase reforming of glycerol for hydrogen production over PtRe supported on carbon. <i>Applied Catalysis B: Environmental</i> , <b>2010</b> , 99, 206-213	21.8	172
58	Synergistic Catalysis between Pd and Fe in Gas Phase Hydrodeoxygenation of m-Cresol. <i>ACS Catalysis</i> , <b>2014</b> , 4, 3335-3345	13.1	153
57	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> , <b>2019</b> , 2, 149-156	36.5	144
56	Stability of bimetallic PdZn catalysts for the steam reforming of methanol. <i>Journal of Catalysis</i> , <b>2008</b> , 257, 64-70	7.3	137
55	Comparison of wall-coated and packed-bed reactors for steam reforming of methanol. <i>Catalysis Today</i> , <b>2005</b> , 110, 86-91	5.3	137
54	The role of PdZn alloy formation and particle size on the selectivity for steam reforming of methanol. <i>Journal of Catalysis</i> , <b>2006</b> , 243, 420-427	7.3	129
53	Correlation of PtRe surface properties with reaction pathways for the aqueous-phase reforming of glycerol. <i>Journal of Catalysis</i> , <b>2012</b> , 287, 37-43	7.3	112
52	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> , <b>2014</b> , 6, 848-856	5.2	111
51	Wall coating of a CuO/ZnO/Al <sub>2</sub> O <sub>3</sub> methanol steam reforming catalyst for micro-channel reformers. <i>Chemical Engineering Journal</i> , <b>2004</b> , 101, 113-121	14.7	106
50	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> , <b>2017</b> , 9, 13772-13785	7.7	104
49	Nonisothermality in packed bed reactors for steam reforming of methanol. <i>Applied Catalysis A: General</i> , <b>2005</b> , 282, 101-109	5.1	85
48	Portable power production from methanol in an integrated thermoelectric/microreactor system. <i>Journal of Power Sources</i> , <b>2008</b> , 179, 113-120	8.9	82
47	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> , <b>2011</b> , 1, 279-286	13.1	80

46	Correlating Ethylene Glycol Reforming Activity with In Situ EXAFS Detection of Ni Segregation in Supported NiPt Bimetallic Catalysts. <i>ACS Catalysis</i> , <b>2012</b> , 2, 2290-2296	13.1	72
45	A comparative study between Co and Rh for steam reforming of ethanol. <i>Applied Catalysis B: Environmental</i> , <b>2010</b> , 96, 441-448	21.8	72
44	Environmental Transmission Electron Microscopy Study of the Origins of Anomalous Particle Size Distributions in Supported Metal Catalysts. <i>ACS Catalysis</i> , <b>2012</b> , 2, 2349-2356	13.1	63
43	Controlling ZnO morphology for improved methanol steam reforming reactivity. <i>Physical Chemistry Chemical Physics</i> , <b>2008</b> , 10, 5584-90	3.6	60
42	Improved selectivity of carbon-supported palladium catalysts for the hydrogenation of acetylene in excess ethylene. <i>Applied Catalysis A: General</i> , <b>2014</b> , 482, 108-115	5.1	59
41	New insights into reaction mechanisms of ethanol steam reforming on Co <sub>3</sub> ZrO <sub>2</sub> . <i>Applied Catalysis B: Environmental</i> , <b>2015</b> , 162, 141-148	21.8	58
40	Density Functional Theory Study of Acetaldehyde Hydrodeoxygenation on MoO <sub>3</sub> . <i>Journal of Physical Chemistry C</i> , <b>2011</b> , 115, 8155-8164	3.8	52
39	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> , <b>2015</b> , 119, 13257-13267	3.8	51
38	Structure Sensitivity of Acetylene Semi-Hydrogenation on Pt Single Atoms and Subnanometer Clusters. <i>ACS Catalysis</i> , <b>2019</b> , 9, 11030-11041	13.1	50
37	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> , <b>2009</b> , 48, 5255-5265	3.9	50
36	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> , <b>2012</b> , 2, 2387-2394	13.1	44
35	Solvent molecules form surface redox mediators in situ and cocatalyze O reduction on Pd. <i>Science</i> , <b>2021</b> , 371, 626-632	33.3	43
34	The role of nanoparticle size and ligand coverage in size focusing of colloidal metal nanoparticles. <i>Nanoscale Advances</i> , <b>2019</b> , 1, 4052-4066	5.1	41
33	Elucidation of the roles of Re in steam reforming of glycerol over PtRe/C catalysts. <i>Journal of Catalysis</i> , <b>2015</b> , 322, 49-59	7.3	41
32	Gaining Control over Radiolytic Synthesis of Uniform Sub-3-nanometer Palladium Nanoparticles: Use of Aromatic Liquids in the Electron Microscope. <i>Langmuir</i> , <b>2016</b> , 32, 1468-77	4	41
31	The effect of zinc addition on the oxidation state of cobalt in Co/ZrO <sub>2</sub> catalysts. <i>ChemSusChem</i> , <b>2011</b> , 4, 1679-84	8.3	33
30	Minimizing the Formation of Coke and Methane on Co Nanoparticles in Steam Reforming of Biomass-Derived Oxygenates. <i>ChemCatChem</i> , <b>2013</b> , 5, 1299-1303	5.2	31
29	Vapor Phase Ketonization of Acetic Acid on Ceria Based Metal Oxides. <i>Topics in Catalysis</i> , <b>2013</b> , 56, 1782-1789	13.8	30

28	Effect of Pd Coordination and Isolation on the Catalytic Reduction of O to HO over PdAu Bimetallic Nanoparticles. <i>Journal of the American Chemical Society</i> , <b>2021</b> , 143, 5445-5464	16.4	30
27	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> , <b>2019</b> , 378, 121-130	7.3	27
26	Elucidation of the Roles of Re in Aqueous-Phase Reforming of Glycerol over PtRe/C Catalysts. <i>ACS Catalysis</i> , <b>2015</b> , 5, 7312-7320	13.1	27
25	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?. <i>ChemCatChem</i> , <b>2020</b> , 12, 1726-1733	5.2	26
24	Rh promoted In <sub>2</sub> O <sub>3</sub> as a highly active catalyst for CO <sub>2</sub> hydrogenation to methanol. <i>Catalysis Science and Technology</i> , <b>2020</b> , 10, 8196-8202	5.5	24
23	Synthesis and Activity of Heterogeneous Pd/Al <sub>2</sub> O <sub>3</sub> and Pd/ZnO Catalysts Prepared from Colloidal Palladium Nanoparticles. <i>Topics in Catalysis</i> , <b>2008</b> , 49, 227-232	2.3	23
22	Coating of steam reforming catalysts in non-porous multi-channeled microreactors. <i>Catalysis Today</i> , <b>2007</b> , 125, 11-15	5.3	22
21	High throughput multiscale modeling for design of experiments, catalysts, and reactors: Application to hydrogen production from ammonia. <i>Chemical Engineering Science</i> , <b>2010</b> , 65, 240-246	4.4	21
20	Wall coating behavior of catalyst slurries in non-porous ceramic microstructures. <i>Chemical Engineering Science</i> , <b>2006</b> , 61, 5678-5685	4.4	21
19	The effect of ZnO addition on Co/C catalyst for vapor and aqueous phase reforming of ethanol. <i>Catalysis Today</i> , <b>2014</b> , 233, 38-45	5.3	20
18	Palladium Acetate Trimer: Understanding Its Ligand-Induced Dissociation Thermochemistry Using Isothermal Titration Calorimetry, X-ray Absorption Fine Structure, and 31P Nuclear Magnetic Resonance. <i>Organometallics</i> , <b>2019</b> , 38, 451-460	3.8	19
17	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> , <b>2012</b> , 2, 2433-2443	13.1	15
16	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> , <b>2016</b> , 269, 103-109	5.3	14
15	Advantages of MgAlO <sub>x</sub> over 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> , <b>2015</b> , 5, 4680-4689	13.1	13
14	On the Reaction Mechanism of Acetaldehyde Decomposition on Mo(110). <i>ACS Catalysis</i> , <b>2012</b> , 2, 468-478	3.1	13
13	Unraveling the Intermediate Reaction Complexes and Critical Role of Support-Derived Oxygen Atoms in CO Oxidation on Single-Atom Pt/CeO <sub>2</sub> . <i>ACS Catalysis</i> , <b>2021</b> , 11, 8701-8715	13.1	13
12	Ligand-Mediated Nucleation and Growth of Palladium Metal Nanoparticles. <i>Journal of Visualized Experiments</i> , <b>2018</b> ,	1.6	11
11	Role of tungsten in the aqueous phase hydrodeoxygenation of ethylene glycol on tungstated zirconia supported palladium. <i>Catalysis Today</i> , <b>2014</b> , 237, 118-124	5.3	10

10	Hierarchically structured catalysts for cascade and selective steam reforming/hydrodeoxygenation reactions. <i>Chemical Communications</i> , <b>2015</b> , 51, 16617-20	5.8	7
9	CoreShell Nanocatalyst Design by Combining High-Throughput Experiments and First-Principles Simulations. <i>ChemCatChem</i> , <b>2013</b> , 5, 3712-3718	5.2	6
8	18.1% single palladium atom catalysts on mesoporous covalent organic framework for gas phase hydrogenation of ethylene. <i>Cell Reports Physical Science</i> , <b>2021</b> , 2, 100495	6.1	5
7	Reduction and Agglomeration of Supported Metal Clusters Induced by High-Flux X-ray Absorption Spectroscopy Measurements. <i>Journal of Physical Chemistry C</i> , <b>2021</b> , 125, 11048-11057	3.8	4
6	Catalytic CO Oxidation on MgAl <sub>2</sub> O <sub>4</sub> -Supported Iridium Single Atoms: Ligand Configuration and Site Geometry. <i>Journal of Physical Chemistry C</i> , <b>2021</b> , 125, 11380-11390	3.8	4
5	Structure sensitivity of n-butane hydrogenolysis on supported Ir catalysts. <i>Journal of Catalysis</i> , <b>2021</b> , 394, 376-386	7.3	4
4	Solvent manipulation of the pre-reduction metal-ligand complex and particle-ligand binding for controlled synthesis of Pd nanoparticles. <i>Nanoscale</i> , <b>2021</b> , 13, 206-217	7.7	3
3	Syngas Conditioning <b>2011</b> , 361-408		2
2	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. <i>Journal of Catalysis</i> , <b>2021</b> , 404, 661-661	7.3	2
1	The Determining Role of Solution Chemistry in Radiation-Induced Nanoparticles Synthesis in the STEM <b>2016</b> , 31-32		