Ayman M Karim

List of Publications by Year in Descending Order

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	H2O-assisted O2 reduction by H2 on Pt and PtAu bimetallic nanoparticles: Influences of composition and reactant coverages on kinetic regimes, rates, and selectivities. *Journal of Catalysis*, **2021**, 404, 661-661	7.3	2
62	Effect of Pd Coordination and Isolation on the Catalytic Reduction of O to HO over PdAu Bimetallic Nanoparticles. *Journal of the American Chemical Society*, **2021**, 143, 5445-5464	16.4	30
61	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	3.8	4
60	Catalytic CO Oxidation on MgAl2O4-Supported Iridium Single Atoms: Ligand Configuration and Site Geometry. *Journal of Physical Chemistry C*, **2021**, 125, 11380-11390	3.8	4
59	Unraveling the Intermediate Reaction Complexes and Critical Role of Support-Derived Oxygen Atoms in CO Oxidation on Single-Atom Pt/CeO2. *ACS Catalysis*, **2021**, 11, 8701-8715	13.1	13
58	Structure sensitivity of n-butane hydrogenolysis on supported Ir catalysts. *Journal of Catalysis*, **2021** , 394, 376-386	7.3	4
57	Solvent manipulation of the pre-reduction metal-ligand complex and particle-ligand binding for controlled synthesis of Pd nanoparticles. *Nanoscale*, **2021**, 13, 206-217	7.7	3
56	Solvent molecules form surface redox mediators in situ and cocatalyze O reduction on Pd. *Science*, **2021**, 371, 626-632	33.3	43
55	18.1% single palladium atom catalysts on mesoporous covalent organic framework for gas phase hydrogenation of ethylene. *Cell Reports Physical Science*, **2021**, 2, 100495	6.1	5
54	Origin of the High CO Oxidation Activity on CeO2 Supported Pt Nanoparticles: Weaker Binding of CO or Facile Oxygen Transfer from the Support?. *ChemCatChem*, **2020**, 12, 1726-1733	5.2	26
53	Rh promoted In2O3 as a highly active catalyst for CO2 hydrogenation to methanol. *Catalysis Science and Technology*, **2020**, 10, 8196-8202	5.5	24
52	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	7.3	27
51	The role of nanoparticle size and ligand coverage in size focusing of colloidal metal nanoparticles. *Nanoscale Advances*, **2019**, 1, 4052-4066	5.1	41
50	Structure Sensitivity of Acetylene Semi-Hydrogenation on Pt Single Atoms and Subnanometer Clusters. *ACS Catalysis*, **2019**, 9, 11030-11041	13.1	50
49	Palladium Acetate Trimer: Understanding Its Ligand-Induced Dissociation Thermochemistry Using Isothermal Titration Calorimetry, X-ray Absorption Fine Structure, and 31P Nuclear Magnetic Resonance. *Organometallics*, **2019**, 38, 451-460	3.8	19
48	Identification of the active complex for CO oxidation over single-atom Ir-on-MgAl2O4 catalysts. *Nature Catalysis*, **2019**, 2, 149-156	36.5	144
47	Ligand-Mediated Nucleation and Growth of Palladium Metal Nanoparticles. *Journal of Visualized Experiments*, **2018**,	1.6	11

46	Colloidal nanoparticle size control: experimental and kinetic modeling investigation of the ligand-metal binding role in controlling the nucleation and growth kinetics. *Nanoscale*, **2017**, 9, 13772-13785	7.7	104
45	Gaining Control over Radiolytic Synthesis of Uniform Sub-3-nanometer Palladium Nanoparticles: Use of Aromatic Liquids in the Electron Microscope. *Langmuir*, **2016**, 32, 1468-77	4	41
44	Aqueous phase hydrodeoxygenation of polyols over Pd/WO3-ZrO2: Role of Pd-WO3 interaction and hydrodeoxygenation pathway. *Catalysis Today*, **2016**, 269, 103-109	5.3	14
43	The Determining Role of Solution Chemistry in Radiation-Induced Nanoparticles Synthesis in the STEM **2016**, 31-32		
42	New insights into reaction mechanisms of ethanol steam reforming on Co/ZrO2. *Applied Catalysis B: Environmental*, **2015**, 162, 141-148	21.8	58
41	Advantages of MgAlOx over γ-Al2O3 as a Support Material for Potassium-Based High-Temperature Lean NOx Traps. *ACS Catalysis*, **2015**, 5, 4680-4689	13.1	13
40	Elucidation of the Roles of Re in Aqueous-Phase Reforming of Glycerol over Pt-Re/C Catalysts. *ACS Catalysis*, **2015**, 5, 7312-7320	13.1	27
39	Hierarchically structured catalysts for cascade and selective steam reforming/hydrodeoxygenation reactions. *Chemical Communications*, **2015**, 51, 16617-20	5.8	7
38	Elucidation of the roles of Re in steam reforming of glycerol over Pt-Re/C catalysts. *Journal of Catalysis*, **2015**, 322, 49-59	7.3	41
37	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. *Journal of Physical Chemistry C*, **2015**, 119, 13257-13267	3.8	51
36	Role of tungsten in the aqueous phase hydrodeoxygenation of ethylene glycol on tungstated zirconia supported palladium. *Catalysis Today*, **2014**, 237, 118-124	5.3	10
35	Catalytic fast pyrolysis of lignocellulosic biomass. *Chemical Society Reviews*, **2014**, 43, 7594-623	58.5	696
34	Synergistic Catalysis between Pd and Fe in Gas Phase Hydrodeoxygenation of m-Cresol. *ACS Catalysis*, **2014**, 4, 3335-3345	13.1	153
33	Molecular structure and stability of dissolved lithium polysulfide species. *Physical Chemistry Chemical Physics*, **2014**, 16, 10923-32	3.6	177
32	The effect of ZnO addition on Co/C catalyst for vapor and aqueous phase reforming of ethanol. *Catalysis Today*, **2014**, 233, 38-45	5.3	20
31	Improved selectivity of carbon-supported palladium catalysts for the hydrogenation of acetylene in excess ethylene. *Applied Catalysis A: General*, **2014**, 482, 108-115	5.1	59
30	The Role of Ru and RuO2 in the Catalytic Transfer Hydrogenation of 5-Hydroxymethylfurfural for the Production of 2,5-Dimethylfuran. *ChemCatChem*, **2014**, 6, 848-856	5.2	111
29	Carbon-supported bimetallic Pd-Fe catalysts for vapor-phase hydrodeoxygenation of guaiacol. *Journal of Catalysis*, **2013**, 306, 47-57	7.3	319

28	Vapor Phase Ketonization of Acetic Acid on Ceria Based Metal Oxides. *Topics in Catalysis*, **2013**, 56, 1782-1789	2.3	30
27	Core-Shell Nanocatalyst Design by Combining High-Throughput Experiments and First-Principles Simulations. *ChemCatChem*, **2013**, 5, 3712-3718	5.2	6
26	Minimizing the Formation of Coke and Methane on Co Nanoparticles in Steam Reforming of Biomass-Derived Oxygenates. *ChemCatChem*, **2013**, 5, 1299-1303	5.2	31
25	Correlation of Pt-Re surface properties with reaction pathways for the aqueous-phase reforming of glycerol. *Journal of Catalysis*, **2012**, 287, 37-43	7.3	112
24	In Situ X-ray Absorption Fine Structure Studies on the Effect of pH on Pt Electronic Density during Aqueous Phase Reforming of Glycerol. *ACS Catalysis*, **2012**, 2, 2387-2394	13.1	44
23	On the Reaction Mechanism of Acetaldehyde Decomposition on Mo(110). *ACS Catalysis*, **2012**, 2, 468-478	13.1	13
22	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	13.1	15
21	Correlating Ethylene Glycol Reforming Activity with In Situ EXAFS Detection of Ni Segregation in Supported NiPt Bimetallic Catalysts. *ACS Catalysis*, **2012**, 2, 2290-2296	13.1	72
20	Environmental Transmission Electron Microscopy Study of the Origins of Anomalous Particle Size Distributions in Supported Metal Catalysts. *ACS Catalysis*, **2012**, 2, 2349-2356	13.1	63
19	Syngas Conditioning **2011**, 361-408		2
18	The effect of zinc addition on the oxidation state of cobalt in Co/ZrO2 catalysts. *ChemSusChem*, **2011**, 4, 1679-84	8.3	33
17	Density Functional Theory Study of Acetaldehyde Hydrodeoxygenation on MoO3. *Journal of Physical Chemistry C*, **2011**, 115, 8155-8164	3.8	52
16	Catalytic Roles of Co0 and Co2+ during Steam Reforming of Ethanol on Co/MgO Catalysts. *ACS Catalysis*, **2011**, 1, 279-286	13.1	80
15	A comparative study between Co and Rh for steam reforming of ethanol. *Applied Catalysis B: Environmental*, **2010**, 96, 441-448	21.8	72
14	Aqueous phase reforming of glycerol for hydrogen production over Pt-Re supported on carbon. *Applied Catalysis B: Environmental*, **2010**, 99, 206-213	21.8	172
13	High throughput multiscale modeling for design of experiments, catalysts, and reactors: Application to hydrogen production from ammonia. *Chemical Engineering Science*, **2010**, 65, 240-246	4.4	21
12	Assessment of Overall Rate Expressions and Multiscale, Microkinetic Model Uniqueness via Experimental Data Injection: Ammonia Decomposition on Ru/γ-Al2O3 for Hydrogen Production. *Industrial & Engineering Chemistry Research*, **2009**, 48, 5255-5265	3.9	50
11	Correlating particle size and shape of supported Ru/gamma-Al2O3 catalysts with NH3 decomposition activity. *Journal of the American Chemical Society*, **2009**, 131, 12230-9	16.4	218

10	Stability of bimetallic PdZn catalysts for the steam reforming of methanol. *Journal of Catalysis*, **2008**, 257, 64-70	7.3	137
9	Controlling ZnO morphology for improved methanol steam reforming reactivity. *Physical Chemistry Chemical Physics*, **2008**, 10, 5584-90	3.6	60
8	Portable power production from methanol in an integrated thermoeletric/microreactor system. *Journal of Power Sources*, **2008**, 179, 113-120	8.9	82
7	Synthesis and Activity of Heterogeneous Pd/Al2O3 and Pd/ZnO Catalysts Prepared from Colloidal Palladium Nanoparticles. *Topics in Catalysis*, **2008**, 49, 227-232	2.3	23
6	Coating of steam reforming catalysts in non-porous multi-channeled microreactors. *Catalysis Today*, **2007**, 125, 11-15	5.3	22
5	The role of PdZn alloy formation and particle size on the selectivity for steam reforming of methanol. *Journal of Catalysis*, **2006**, 243, 420-427	7.3	129
4	Wall coating behavior of catalyst slurries in non-porous ceramic microstructures. *Chemical Engineering Science*, **2006**, 61, 5678-5685	4.4	21
3	Comparison of wall-coated and packed-bed reactors for steam reforming of methanol. *Catalysis Today*, **2005**, 110, 86-91	5.3	137
2	Nonisothermality in packed bed reactors for steam reforming of methanol. *Applied Catalysis A: General*, **2005**, 282, 101-109	5.1	85
1	Wall coating of a CuO/ZnO/Al2O3 methanol steam reforming catalyst for micro-channel reformers. *Chemical Engineering Journal*, **2004**, 101, 113-121	14.7	106