Svitlana Pylypenko

List of Publications by Year
in descending order

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117 papers	6,341 citations	94433 37 h-index	69250 77 g-index
121 all docs	121 docs citations	121 times ranked	8813 citing authors

#	Article	IF	Citations
1	Cross-Laboratory Experimental Study of Non-Noble-Metal Electrocatalysts for the Oxygen Reduction Reaction. ACS Applied Materials & Interfaces, 2009, 1, 1623-1639.	8.0	655
2	Enhancement of Pt and Pt-alloy fuel cell catalyst activity and durability via nitrogen-modified carbon supports. Energy and Environmental Science, 2010, 3, 1437.	30.8	586
3	Recent progress on nitrogen/carbon structures designed for use in energy and sustainability applications. Energy and Environmental Science, 2014, 7, 1212-1249.	30.8	559
4	Anion-Exchange Membrane Fuel Cells: Dual-Site Mechanism of Oxygen Reduction Reaction in Alkaline Media on Cobaltâ˜Polypyrrole Electrocatalysts. Journal of Physical Chemistry C, 2010, 114, 5049-5059.	3.1	255
5	Non-platinum oxygen reduction electrocatalysts based on pyrolyzed transition metal macrocycles. Electrochimica Acta, 2008, 53, 7875-7883.	5.2	241
6	Direct Spectroscopic Observation of the Structural Origin of Peroxide Generation from Co-Based Pyrolyzed Porphyrins for ORR Applications. Journal of Physical Chemistry C, 2008, 112, 8839-8849.	3.1	215
7	Oxygen Reduction Reaction Measurements on Platinum Electrocatalysts Utilizing Rotating Disk Electrode Technique. Journal of the Electrochemical Society, 2015, 162, F1384-F1396.	2.9	211
8	Bifunctional Oxygen Reduction Reaction Mechanism on Non-Platinum Catalysts Derived from Pyrolyzed Porphyrins. Journal of the Electrochemical Society, 2010, 157, B54.	2.9	180
9	Iridium-Based Nanowires as Highly Active, Oxygen Evolution Reaction Electrocatalysts. ACS Catalysis, 2018, 8, 2111-2120.	11.2	166
10	Activity and Durability of Iridium Nanoparticles in the Oxygen Evolution Reaction. Journal of the Electrochemical Society, 2016, 163, F3105-F3112.	2.9	154
11	Multi-Component Feâ€“Ni Hydroxide Nanocatalyst for Oxygen Evolution and Methanol Oxidation Reactions under Alkaline Conditions. ACS Catalysis, 2017, 7, 365-379.	11.2	154
12	A review on direct methanol fuel cellsâ€“In the perspective of energy and sustainability. MRS Energy & Sustainability, 2015, 2, 1.	3.0	135
13	Core Level Shifts of Hydrogenated Pyridinic and Pyrrolic Nitrogen in the Nitrogen-Containing Graphene-Based Electrocatalysts: In-Plane vs Edge Defects. Journal of Physical Chemistry C, 2016, 120, 29225-29232.	3.1	123
14	Nitrogen: unraveling the secret to stable carbon-supported Pt-alloy electrocatalysts. Energy and Environmental Science, 2013, 6, 2957.	30.8	99
15	Predictive Modeling of Electrocatalyst Structure Based on Structure-to-Property Correlations of X-ray Photoelectron Spectroscopic and Electrochemical Measurements. Langmuir, 2008, 24, 9082-9088.	3.5	84
16	Dictating Pt-Based Electrocatalyst Performance in Polymer Electrolyte Fuel Cells, from Formulation to Application. ACS Applied Materials & Interfaces, 2019, 11, 46953-46964.	8.0	80
17	Platinum-Coated Nickel Nanowires as Oxygen-Reducing Electrocatalysts. ACS Catalysis, 2014, 4, 1114-1119.	11.2	79
18	Tuning Carbon-Based Fuel Cell Catalyst Support Structures via Nitrogen Functionalization. I. Investigation of Structural and Compositional Modification of Highly Oriented Pyrolytic Graphite Model Catalyst Supports as a Function of Nitrogen Implantation Dose. Journal of Physical Chemistry C, 2011, 115, 13667-13675.	3.1	76

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19	Control of interfacial acidâ€“metal catalysis with organic monolayers. Nature Catalysis, 2018, 1, 148-155.	34.4	74
20	Structure-to-property relationships in fuel cell catalyst supports: Correlation of surface chemistry and morphology with oxidation resistance of carbon blacks. Journal of Power Sources, 2012, 214, 303-313.	7.8	67
21	Bandgap Tuning of Silicon Quantum Dots by Surface Functionalization with Conjugated Organic Groups. Nano Letters, 2015, 15, 3657-3663.	9.1	64
22	Platinum group metal-free electrocatalysts: Effects of synthesis on structure and performance in proton-exchange membrane fuel cell cathodes. Journal of Power Sources, 2017, 348, 30-39.	7.8	60
23	Utilizing ink composition to tune bulk-electrode gas transport, performance, and operational robustness for a Feâ€“Nâ€“C catalyst in polymer electrolyte fuel cell. Nano Energy, 2020, 75, 104943.	16.0	60
24	Platinum-Coated Cobalt Nanowires as Oxygen Reduction Reaction Electrocatalysts. ACS Catalysis, 2014, 4, 2680-2686.	11.2	59
25	Three-dimensional electronic resistivity mapping of solid electrolyte interphase on Si anode materials. Nano Energy, 2019, 55, 477-485.	16.0	56
26	Tuning Carbon-Based Fuel Cell Catalyst Support Structures via Nitrogen Functionalization. II. Investigation of Durability of Ptâ€“Ru Nanoparticles Supported on Highly Oriented Pyrolytic Graphite Model Catalyst Supports As a Function of Nitrogen Implantation Dose. Journal of Physical Chemistry C, 2011, 115, 13676-13684.	3.1	54
27	Exceptional Oxygen Reduction Reaction Activity and Durability of Platinumâ€“Nickel Nanowires through Synthesis and Post-Treatment Optimization. ACS Omega, 2017, 2, 1408-1418.	3.5	53
28	Aligned carbon nanotube array functionalization for enhanced atomic layer deposition of platinum electrocatalysts. Applied Surface Science, 2012, 258, 5212-5221.	6.1	52
29	Exploring the Interface of Skinâ€Layered Titanium Fibers for Electrochemical Water Splitting. Advanced Energy Materials, 2021, 11, 2002926.	19.5	48
30	Benchmarking the oxygen reduction reaction activity of Pt-based catalysts using standardized rotating disk electrode methods. International Journal of Hydrogen Energy, 2015, 40, 16820-16830.	7.1	47
31	Study of Lithium Silicide Nanoparticles as Anode Materials for Advanced Lithium Ion Batteries. ACS Applied Materials & Interfaces, 2017, 9, 16071-16080.	8.0	47
32	Improving the bulk gas transport of Fe-N-C platinum group metal-free nanofiber electrodes via electrospinning for fuel cell applications. Nano Energy, 2020, 73, 104791.	16.0	47
33	Toward All-Solid-State Lithium Batteries: Three-Dimensional Visualization of Lithium Migration in Î²-Li‹sub›3‹/sub›PS‹sub›4‹/sub› Ceramic Electrolyte. Journal of the Electrochemical Society, 2018, 165, A3732-A3737.	2.9	46
34	Impact of Microporous Layer Roughness on Gas-Diffusion-Electrode-Based Polymer Electrolyte Membrane Fuel Cell Performance. ACS Applied Energy Materials, 2019, 2, 7757-7761.	5.1	46
35	Molybdenum incorporated mesoporous silica catalyst for production of biofuels and value-added chemicals via catalytic fast pyrolysis. Green Chemistry, 2015, 17, 3035-3046.	9.0	45
36	Microparticles with Bimodal Nanoporosity Derived by Microemulsion Templating. Langmuir, 2009, 25, 13540-13544.	3.5	44

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37	Role of Surface Chemistry on Catalyst/Ionomer Interactions for Transition Metalâ€“Nitrogenâ€“Carbon Electrocatalysts. ACS Applied Energy Materials, 2018, 1, 68-77.	5.1	44
38	Fuel Cell Performance Implications of Membrane Electrode Assembly Fabrication with Platinum-Nickel Nanowire Catalysts. Journal of the Electrochemical Society, 2018, 165, F238-F245.	2.9	39
39	Development of high-performance roll-to-roll-coated gas-diffusion-electrode-based fuel cells. Journal of Power Sources, 2021, 506, 230039.	7.8	36
40	ZIF 67 Based Highly Active Electrocatalysts as Oxygen Electrodes in Water Electrolyzer. ACS Applied Energy Materials, 2019, 2, 5568-5576.	5.1	35
41	Organometallic Complexes Anchored to Conductive Carbon for Electrocatalytic Oxidation of Methane at Low Temperature. Journal of the American Chemical Society, 2016, 138, 116-125.	13.7	34
42	Investigation of the Microstructure and Rheology of Iridium Oxide Catalyst Inks for Low-Temperature Polymer Electrolyte Membrane Water Electrolyzers. ACS Applied Materials & Interfaces, 2019, 11, 45068-45079.	8.0	34
43	Improved durability and activity of Pt/C catalysts through atomic layer deposition of tungsten nitride and subsequent thermal treatment. Applied Catalysis B: Environmental, 2019, 254, 587-593.	20.2	33
44	Fabrication of high-performance gas-diffusion-electrode based membrane-electrode assemblies. Journal of Power Sources, 2020, 450, 227581.	7.8	33
45	Ptâ€“Ru Alloyed Fuel Cell Catalysts Sputtered from a Single Alloyed Target. ACS Catalysis, 2011, 1, 1307-1315.	11.2	32
46	Templated Platinum/Carbon Oxygen Reduction Fuel Cell Electrocatalysts. Journal of Physical Chemistry C, 2010, 114, 4200-4207.	3.1	30
47	Synthesis of a mixed-valent tin nitride and considerations of its possible crystal structures. Journal of Chemical Physics, 2016, 144, 144201.	3.0	29
48	Deactivation and stability of K-CoMoSx mixed alcohol synthesis catalysts. Journal of Catalysis, 2014, 309, 199-208.	6.2	28
49	Deep eutectic solvent approach towards nickel/nickel nitride nanocomposites. Catalysis Today, 2018, 306, 9-15.	4.4	28
50	Single-Step Plasma Synthesis of Carbon-Coated Silicon Nanoparticles. ACS Applied Materials & Interfaces, 2014, 6, 19026-19034.	8.0	27
51	Potential-Directed Assembly of Aryl Iodonium Salts onto Silicon {100} Hydride Terminated and Platinum Surfaces. Langmuir, 2005, 21, 10899-10901.	3.5	26
52	The Roles of Oxide Growth and Sub-Surface Facets in Oxygen Evolution Activity of Iridium and Its Impact on Electrolysis. Journal of the Electrochemical Society, 2019, 166, F1243-F1252.	2.9	25
53	Application of XPS spectral subtraction and multivariate analysis for the characterization of Ar+ ion beam modified polyimide surfaces. Applied Surface Science, 2010, 256, 3204-3210.	6.1	24
54	Composition- and Morphology-Dependent Corrosion Stability of Ruthenium Oxide Materials. ACS Applied Materials & Interfaces, 2009, 1, 604-611.	8.0	23

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55	Synthesis of Porous Crystalline Doped Titania Photocatalysts Using Modified Precursor Strategy. Chemistry of Materials, 2016, 28, 7878-7888.	6.7	23
56	Palladium Intercalated into the Walls of Mesoporous Silica as Robust and Regenerable Catalysts for Hydrodeoxygenation of Phenolic Compounds. ACS Omega, 2018, 3, 7681-7691.	3.5	23
57	La and Al co-doped CaMnO3 perovskite oxides: From interplay of surface properties to anion exchange membrane fuel cell performance. Journal of Power Sources, 2018, 375, 265-276.	7.8	23
58	Effect of Halide-Modified Model Carbon Supports on Catalyst Stability. ACS Applied Materials & Interfaces, 2012, 4, 6728-6734.	8.0	22
59	Oxidation of Platinum Nickel Nanowires to Improve Durability of Oxygen-Reducing Electrocatalysts. Journal of the Electrochemical Society, 2016, 163, F296-F301.	2.9	22
60	Strong Metalâ€“Support Interactions of TiNâ€“ and TiO₂â€“Nickel Nanocomposite Catalysts. Journal of Physical Chemistry C, 2018, 122, 339-348.	3.1	22
61	Mechanical Properties and Chemical Reactivity of Li_xSiO_y Thin Films. ACS Applied Materials & Interfaces, 2018, 10, 38558-38564.	8.0	21
62	Thermal Activation of a Copper-Loaded Covalent Organic Framework for Near-Ambient Temperature Hydrogen Storage and Delivery. , 2020, 2, 227-232.		21
63	Toward Optimizing Electrospun Nanofiber Fuel Cell Catalyst Layers: Microstructure and Pt Accessibility. ACS Applied Energy Materials, 2021, 4, 3341-3351.	5.1	21
64	Use of digital image processing of microscopic images and multivariate analysis for quantitative correlation of morphology, activity and durability of electrocatalysts. RSC Advances, 2012, 2, 4304.	3.6	20
65	Characterizing Complex Gasâ€“Solid Interfaces with in Situ Spectroscopy: Oxygen Adsorption Behavior on Feâ€“Nâ€“C Catalysts. Journal of Physical Chemistry C, 2020, 124, 16529-16543.	3.1	20
66	Visualization, understanding, and mitigation of process-induced-membrane irregularities in gas diffusion electrode-based polymer electrolyte membrane fuel cells. International Journal of Hydrogen Energy, 2021, 46, 14699-14712.	7.1	20
67	Selectivity of Cobalt-Based Non-Platinum Oxygen Reduction Catalysts in the Presence of Methanol and Formic Acid. Journal of Physical Chemistry C, 2010, 114, 15190-15195.	3.1	19
68	Enhanced Stability of PtRu Supported on N-Doped Carbon for the Anode of a DMFC. Journal of the Electrochemical Society, 2012, 159, F768-F778.	2.9	19
69	Effects of Metal Composition and Ratio on Peptide-Templated Multimetallic PdPt Nanomaterials. ACS Applied Materials & Interfaces, 2017, 9, 8030-8040.	8.0	19
70	Platinumâ€“Nickel Nanowires with Improved Hydrogen Evolution Performance in Anion Exchange Membrane-Based Electrolysis. ACS Catalysis, 2020, 10, 9953-9966.	11.2	19
71	Fabrication of a mesoporous Ba_{0.5}Sr_{0.5}Co_{0.8}Fe_{0.2}O_{3â^'Î´} perovskite as a low-cost and efficient catalyst for oxygen reduction. Dalton Transactions, 2017, 46, 13903-13911.	3.3	18
72	Multi-Scale Multi-Technique Characterization Approach for Analysis of PEM Electrolyzer Catalyst Layer Degradation. Journal of the Electrochemical Society, 2022, 169, 064502.	2.9	18

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73	Characterization of Complex Interactions at the Gasâ€“Solid Interface with in Situ Spectroscopy: The Case of Nitrogen-Functionalized Carbon. Journal of Physical Chemistry C, 2019, 123, 9074-9086.	3.1	17
74	Mass transport characterization of platinum group metal-free polymer electrolyte fuel cell electrodes using a differential cell with an integrated electrochemical sensor. Journal of Power Sources, 2020, 450, 227655.	7.8	17
75	Synthesis by Spray Pyrolysis of Mesoporous NbRuyOz as Electrocatalyst Supports in Fuel Cells. ACS Applied Materials & Interfaces, 2010, 2, 86-95.	8.0	16
76	Microfluidic Synthesis of Monodisperse Nanoporous Oxide Particles and Control of Hierarchical Pore Structure. ACS Applied Materials & Interfaces, 2013, 5, 3524-3529.	8.0	16
77	Universal and Versatile Route for Selective Covalent Tethering of Single-Site Catalysts and Functional Groups on the Surface of Ordered Mesoporous Carbons. Chemistry of Materials, 2014, 26, 2873-2882.	6.7	16
78	Spectroscopic investigation of nitrogenâ€functionalized carbon materials. Surface and Interface Analysis, 2016, 48, 283-292.	1.8	16
79	Atomic layer deposition of TiO2 for stabilization of Pt nanoparticle oxygen reduction reaction catalysts. Journal of Applied Electrochemistry, 2018, 48, 973-984.	2.9	16
80	Highâ€Performance Alkaline Direct Methanol Fuel Cell using a Nitrogenâ€Postdoped Anode. ChemSusChem, 2014, 7, 1854-1857.	6.8	15
81	Effect of nitrogen post-doping on a commercial platinumâ€“ruthenium/carbon anode catalyst. Journal of Power Sources, 2014, 248, 296-306.	7.8	15
82	Platinum Nickel Nanowires as Methanol Oxidation Electrocatalysts. Journal of the Electrochemical Society, 2015, 162, F1299-F1304.	2.9	15
83	Activity and Durability of Iridium Nanoparticles in the Oxygen Evolution Reaction. ECS Transactions, 2015, 69, 883-892.	0.5	14
84	Editorsâ€™ Choiceâ€”Examining Performance and Durability of Anion Exchange Membrane Fuel Cells with Novel Spirocyclic Anion Exchange Membranes. Journal of the Electrochemical Society, 2021, 168, 044525.	2.9	14
85	Application of thiolate self-assembled monolayers in selective alcohol oxidation for suppression of Pd catalyst deactivation. Journal of Catalysis, 2016, 344, 722-728.	6.2	13
86	Enhanced metal loading in SBA-15-type catalysts facilitated by salt addition: Synthesis, characterization and catalytic epoxide alcoholysis activity of molybdenum incorporated porous silica. Applied Catalysis A: General, 2014, 475, 469-476.	4.3	12
87	Synthesis of high surface area CaxLa(1â^'x)Al(1â^'x)MnxO(3â^'Î´) perovskite oxides for oxygen reduction electrocatalysis in alkaline media. Catalysis Science and Technology, 2016, 6, 7744-7751.	4.1	12
88	Impact of electrode thick spot irregularities on polymer electrolyte membrane fuel cell initial performance. Journal of Power Sources, 2020, 466, 228344.	7.8	12
89	Improvement in direct methanol fuel cell performance by treating the anode at high anodic potential. Journal of Power Sources, 2014, 245, 37-47.	7.8	11
90	X-ray photoelectron spectroscopy and rotating disk electrode measurements of smooth sputtered Fe-N-C films. Applied Surface Science, 2020, 515, 146012.	6.1	11

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91	Operando X-ray Tomography Imaging of Solid-State Electrolyte Response to Li Evolution under Realistic Operating Conditions. ACS Applied Energy Materials, 2021, 4, 1346-1355.	5.1	11
92	In situ small-angle x-ray scattering analysis of improved catalystâ€"support interactions through nitrogen modification. MRS Communications, 2012, 2, 85-89.	1.8	10
93	2D and 3D Characterization of PtNi Nanowire Electrode Composition and Structure. ACS Applied Nano Materials, 2019, 2, 525-534.	5.0	10
94	Direct synthesis of Fe rich SBA-15â€˜at low pH by in-situ formation of iron phosphate phase. Microporous and Mesoporous Materials, 2019, 276, 270-279.	4.4	10
95	Direct Conversion of Hydride- to Siloxane-Terminated Silicon Quantum Dots. Journal of Physical Chemistry C, 2016, 120, 25822-25831.	3.1	9
96	Decarboxylation of stearic acid over Ni/MOR catalysts. Journal of Chemical Technology and Biotechnology, 2020, 95, 102-110.	3.2	9
97	Functional DMFC Cathode Catalysts and Supports Based on Niobium Oxide Phase. Journal of the Electrochemical Society, 2011, 158, B485.	2.9	7
98	Extended Thin-Film Electrocatalyst Structures via Pt Atomic Layer Deposition. ACS Applied Nano Materials, 2018, 1, 6150-6158.	5.0	7
99	3D Atomic Understanding of Functionalized Carbon Nanostructures for Energy Applications. ACS Applied Nano Materials, 2020, 3, 1600-1611.	5.0	7
100	Optimization of Extended-Surface PtNi Nanowire Oxygen Reduction Electrocatalysts Produced via Atomic Layer Deposition. ACS Applied Energy Materials, 2022, 5, 4587-4602.	5.1	7
101	Mechanistic Study of Shape-Anisotropic Nanomaterials Synthesized via Spontaneous Galvanic Displacement. Journal of Physical Chemistry C, 2016, 120, 25053-25060.	3.1	5
102	Periodic Trends behind the Stability of Metal Catalysts Supported on Graphene with Graphitic Nitrogen Defects. ACS Omega, 2021, 6, 28215-28228.	3.5	5
103	The Role of Nitrogen Doping on Durability in the Pt-Ru/HOPG System. ECS Transactions, 2010, 33, 351-357.	0.5	4
104	Single-step non-thermal plasma synthesis of 3C-SiC nanoparticles. Materials Research Express, 2015, 2, 015019.	1.6	4
105	Physicochemical Properties of ECS Supports and Pt/ECS Catalysts. ACS Applied Energy Materials, 2021, 4, 9111-9123.	5.1	4
106	Atomic Layer Deposition of Platinum onto Functionalized Aligned MWNT Arrays for Fuel Cell Application. ECS Transactions, 2010, 33, 89-96.	0.5	3
107	Hierarchically Structured Ptâ€"Alloy Ethanol Oxidation Electrocatalysts. Electrocatalysis, 2012, 3, 334-345.	3.0	3
108	Hydrocarbon catalyzed-selective catalytic reduction catalysts using core-shell atomic layer deposited CeO2 and ZrO2. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2019, 37, 020919.	2.1	3

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109	Tuning Gas Adsorption Selectivity and Diffusion Rates in Zeolites with Phosphonic Acid Monolayers. Cell Reports Physical Science, 2020, 1, 100036.	5.6	3
110	Non-aqueous thermolytic route to oxynitride photomaterials using molecular precursors Ti(OtBu)4 and Nî€,Mo(OtBu)3. Journal of Materials Chemistry A, 2013, 1, 14066.	10.3	2
111	Nitrogen Post Modification of PtRu/Carbon Catalysts for Improved Methanol Oxidation Reaction Performance in Alkaline Media. Journal of the Electrochemical Society, 2015, 162, F913-F918.	2.9	2
112	The Influence of Surfaces and Deposition Processes on Pt Structure and Properties. ECS Transactions, 2010, 33, 221-228.	0.5	1
113	Droplet Based Microfluidics for Synthesis of Mesoporous Silica Microspheres. Materials Research Society Symposia Proceedings, 2010, 1272, 1.	0.1	1
114	N-Modified Carbon Supported Pt-Ru Direct Methanol Fuel Cell Catalyst Performance and Durability. ECS Meeting Abstracts, 2011, , .	0.0	1
115	Surface and bulk characterization of reservoir and cap-rocks: Past, present, and future. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2020, 38, 050801.	2.1	1
116	Effect of Alloying Pd with Oxophillic Metals on Electro-Oxidation of Alcohols in Alkaline Media. ECS Transactions, 2010, 33, 1655-1663.	0.5	0
117	Microscopy-based Multi-technique, Multi-scale Characterization of Polymer Electrolyte Membrane Devices. Microscopy and Microanalysis, 2020, 26, 772-774.	0.4	0