Ifan E L Stephens

List of Publications by Year
in descending order

108 papers	19,465 citations	34105 52 h-index	29157 104 g-index
118 all docs	118 docs citations	118 times ranked	16185 citing authors

#	Article	IF	Citations
1	Metal coordination in C₂N-like materials towards dual atom catalysts for oxygen reduction. Journal of Materials Chemistry A, 2022, 10, 6023-6030.	10.3	21
2	Dualâ€Metal Atom Electrocatalysts: Theory, Synthesis, Characterization, and Applications. Advanced Energy Materials, 2022, 12, .	19.5	78
3	How to Minimise Hydrogen Evolution on Carbon Based Materials?. Journal of the Electrochemical Society, 2022, 169, 054516.	2.9	6
4	Spectroelectrochemical Analysis of the Water Oxidation Mechanism on Doped Nickel Oxides. Journal of the American Chemical Society, 2022, 144, 7622-7633.	13.7	66
5	Spectroelectrochemistry of Water Oxidation Kinetics in Molecular versus Heterogeneous Oxide Iridium Electrocatalysts. Journal of the American Chemical Society, 2022, 144, 8454-8459.	13.7	25
6	2022 roadmap on low temperature electrochemical CO₂ reduction. JPhys Energy, 2022, 4, 042003.	5.3	76
7	Electrocatalytic Reduction of Furfural Using Single-Atom Molecular Catalysts. ECS Meeting Abstracts, 2022, MA2022-01, 961-961.	0.0	0
8	Deconvoluting Transport and Kinetics on Ionic Liquid-Modified Fe Catalysts for Oxygen Reduction. ECS Meeting Abstracts, 2022, MA2022-01, 1471-1471.	0.0	0
9	Probing Crossover Degradation Effects in Nickel-Rich LiNi_xMn_yCo_zO₂ Lithium-Ion Battery Cathodes with Ultrasensitive on-Chip Electrochemistry Mass Spectrometry. ECS Meeting Abstracts, 2022, MA2022-01, 350-350.	0.0	3
10	Oxygen Evolution Reaction Catalyst Development: Benchmarking IrO_x Catalyst Activity and Stability. ECS Meeting Abstracts, 2022, MA2022-01, 1367-1367.	0.0	1
11	Tuning CO₂ to CO Conversion on Metal-Doped Carbon Catalysts. ECS Meeting Abstracts, 2022, MA2022-01, 1613-1613.	0.0	0
12	How to Impede Hydrogen Evolution on Carbon Based Materials?. ECS Meeting Abstracts, 2022, MA2022-01, 1481-1481.	0.0	0
13	Targeted Synthesis of Metal Dual Atom Electrocatalysts. ECS Meeting Abstracts, 2022, MA2022-01, 629-629.	0.0	0
14	Monitoring the active sites for the hydrogen evolution reaction at model carbon surfaces. Physical Chemistry Chemical Physics, 2021, 23, 10051-10058.	2.8	21
15	Understanding What Controls the Rate of Electrochemical Oxygen Evolution. Joule, 2021, 5, 16-18.	24.0	14
16	Role of Catalyst in Controlling N₂ Reduction Selectivity: A Unified View of Nitrogenase and Solid Electrodes. ACS Catalysis, 2021, 11, 6596-6601.	11.2	25
17	Progress and Perspectives in Photoâ€•and Electrochemicalâ€Oxidation of Biomass for Sustainable Chemicals and Hydrogen Production. Advanced Energy Materials, 2021, 11, 2101180.	19.5	200
18	Is lithium the key for nitrogen electroreduction?. Science, 2021, 372, 1149-1150.	12.6	37

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19	Degradation in lithium ion battery current collectors. JPhys Energy, 2021, 3, 032015.	5.3	32
20	Methods for nitrogen activation by reduction and oxidation. Nature Reviews Methods Primers, 2021, 1, .	21.2	107
21	Engineering the Electrochemical Interface of Oxygen Reduction Electrocatalysts with Ionic Liquids: A Review. Advanced Energy and Sustainability Research, 2021, 2, 2000062.	5.8	13
22	(Keynote) Why Is Lithium Uniquely Able to Reduce Nitrogen to Ammonia Under Ambient Conditions?. ECS Meeting Abstracts, 2021, MA2021-02, 1542-1542.	0.0	0
23	Redox-State Kinetics in Water-Oxidation IrO_{<i>x</i>} Electrocatalysts Measured by <i>Operando</i> Spectroelectrochemistry. ACS Catalysis, 2021, 11, 15013-15025.	11.2	23
24	(Invited) Nitrogen Activation by Reduction and Oxidation: A Primer for Rigorous and Reproducible Measurements. ECS Meeting Abstracts, 2021, MA2021-02, 1552-1552.	0.0	0
25	X-ray Absorption Spectroscopy Investigation of Platinumâ€“Gadolinium Thin Films with Different Stoichiometry for the Oxygen Reduction Reaction. Catalysts, 2020, 10, 978.	3.5	2
26	Operando identification of site-dependent water oxidation activity on ruthenium dioxide single-crystal surfaces. Nature Catalysis, 2020, 3, 516-525.	34.4	166
27	Towards Active and Stable Bifunctional NiCo₂O₄ Catalysts for O₂ Evolution and Reduction in Alkaline Media. ECS Meeting Abstracts, 2020, MA2020-02, 3860-3860.	0.0	0
28	Spectroelectrochemical study of water oxidation on nickel and iron oxyhydroxide electrocatalysts. Nature Communications, 2019, 10, 5208.	12.8	118
29	Structure Sensitivity in the Electrocatalytic Reduction of CO₂ with Gold Catalysts. Angewandte Chemie - International Edition, 2019, 58, 3774-3778.	13.8	106
30	Structure Sensitivity in the Electrocatalytic Reduction of CO2with Gold Catalysts. Angewandte Chemie, 2019, 131, 3814-3818.	2.0	18
31	Progress and Perspectives of Electrochemical CO₂ Reduction on Copper in Aqueous Electrolyte. Chemical Reviews, 2019, 119, 7610-7672.	47.7	2,708
32	Concentrated Electrolytes for Enhanced Stability of Al-Alloy Negative Electrodes in Li-Ion Batteries. Journal of the Electrochemical Society, 2019, 166, A1867-A1874.	2.9	28
33	A rigorous electrochemical ammonia synthesis protocol with quantitative isotope measurements. Nature, 2019, 570, 504-508.	27.8	1,006
34	Structureâ€Sensitivity and Electrolyte Effects in CO₂ Electroreduction: From Model Studies to Applications. ChemCatChem, 2019, 11, 3626-3645.	3.7	61
35	Activityâ€"or Lack Thereofâ€"of RuO₂-Based Electrodes in the Electrocatalytic Reduction of CO₂. Journal of Physical Chemistry C, 2019, 123, 17765-17773.	3.1	13
36	Recommended Practices and Benchmark Activity for Hydrogen and Oxygen Electrocatalysis in Water Splitting and Fuel Cells. Advanced Materials, 2019, 31, e1806296.	21.0	841

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37	Towards an atomistic understanding of electrocatalytic partial hydrocarbon oxidation: propene on palladium. Energy and Environmental Science, 2019, 12, 1055-1067.	30.8	39
38	The Role of Electrocatalysis in a Sustainable Future: From Renewable Energy Conversion and Storage to Emerging Reactions. ChemPhysChem, 2019, 20, 2900-2903.	2.1	17
39	Frontispiece: Elucidation of the Oxygen Reduction Volcano in Alkaline Media using a Copperâ€“Platinum(111) Alloy. Angewandte Chemie - International Edition, 2018, 57, .	13.8	1
40	Fundamental limitation of electrocatalytic methane conversion to methanol. Physical Chemistry Chemical Physics, 2018, 20, 11152-11159.	2.8	73
41	Carbon catalysts for electrochemical hydrogen peroxide production in acidic media. Electrochimica Acta, 2018, 272, 192-202.	5.2	63
42	Scalable Synthesis of Carbon-Supported Platinumâ€“Lanthanide and âˆ’Rare-Earth Alloys for Oxygen Reduction. ACS Catalysis, 2018, 8, 2071-2080.	11.2	59
43	Elucidation of the Oxygen Reduction Volcano in Alkaline Media using a Copperâ€“Platinum(111) Alloy. Angewandte Chemie - International Edition, 2018, 57, 2800-2805.	13.8	72
44	Elucidation of the Oxygen Reduction Volcano in Alkaline Media using a Copperâ€“Platinum(111) Alloy. Angewandte Chemie, 2018, 130, 2850-2855.	2.0	10
45	Electroreduction of CO on Polycrystalline Copper at Low Overpotentials. ACS Energy Letters, 2018, 3, 634-640.	17.4	73
46	Frontispiz: Elucidation of the Oxygen Reduction Volcano in Alkaline Media using a Copperâ€“Platinum(111) Alloy. Angewandte Chemie, 2018, 130, .	2.0	0
47	Toward the Decentralized Electrochemical Production of H₂O₂: A Focus on the Catalysis. ACS Catalysis, 2018, 8, 4064-4081.	11.2	663
48	Importance of Surface IrO_{<i>x</i>}in Stabilizing RuO₂for Oxygen Evolution. Journal of Physical Chemistry B, 2018, 122, 947-955.	2.6	95
49	Impact of nanoparticle size and lattice oxygen on water oxidation on NiFeOxHy. Nature Catalysis, 2018, 1, 820-829.	34.4	344
50	Polycrystalline and Singleâ€Crystal Cu Electrodes: Influence of Experimental Conditions on the Electrochemical Properties in Alkaline Media. Chemistry - A European Journal, 2018, 24, 17743-17755.	3.3	46
51	Frontispiece: Active-Phase Formation and Stability of Gd/Pt(111) Electrocatalysts for Oxygen Reduction: An In Situ Grazing Incidence X-Ray Diffraction Study. Chemistry - A European Journal, 2018, 24, .	3.3	0
52	Activeâ€Phase Formation and Stability of Gd/Pt(111) Electrocatalysts for Oxygen Reduction: An In Situ Grazing Incidence Xâ€Ray Diffraction Study. Chemistry - A European Journal, 2018, 24, 12280-12290.	3.3	17
53	Trends in Activity and Dissolution on RuO₂ under Oxygen Evolution Conditions: Particles versus Well-Defined Extended Surfaces. ACS Energy Letters, 2018, 3, 2045-2051.	17.4	144
54	Surface Orientation Dependent Water Dissociation on Rutile Ruthenium Dioxide. Journal of Physical Chemistry C, 2018, 122, 17802-17811.	3.1	44

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55	<i>Operando</i> XAS Study of the Surface Oxidation State on a Monolayer IrO_{<i>x</i>} on RuO_{<i>x</i>} and Ru Oxide Based Nanoparticles for Oxygen Evolution in Acidic Media. Journal of Physical Chemistry B, 2018, 122, 878-887.	2.6	59
56	Operando investigation of Au-MnOx thin films with improved activity for the oxygen evolution reaction. Electrochimica Acta, 2017, 230, 22-28.	5.2	39
57	New Platinum Alloy Catalysts for Oxygen Electroreduction Based on Alkaline Earth Metals. Electrocatalysis, 2017, 8, 594-604.	3.0	23
58	High Specific and Mass Activity for the Oxygen Reduction Reaction for Thin Film Catalysts of Sputtered Pt₃Y. Advanced Materials Interfaces, 2017, 4, 1700311.	3.7	39
59	Quantification of liquid products from the electroreduction of CO2 and CO using static headspace-gas chromatography and nuclear magnetic resonance spectroscopy. Catalysis Today, 2017, 288, 54-62.	4.4	16
60	Orientation-Dependent Oxygen Evolution on RuO₂ without Lattice Exchange. ACS Energy Letters, 2017, 2, 876-881.	17.4	251
61	Fuel Cells: High Specific and Mass Activity for the Oxygen Reduction Reaction for Thin Film Catalysts of Sputtered Pt₃Y (Adv. Mater. Interfaces 13/2017). Advanced Materials Interfaces, 2017, 4, .	3.7	0
62	Towards identifying the active sites on RuO₂(110) in catalyzing oxygen evolution. Energy and Environmental Science, 2017, 10, 2626-2637.	30.8	278
63	Benchmarking Pt and Pt-lanthanide sputtered thin films for oxygen electroreduction: fabrication and rotating disk electrode measurements. Electrochimica Acta, 2017, 247, 708-721.	5.2	39
64	Toward sustainable fuel cells. Science, 2016, 354, 1378-1379.	12.6	384
65	Tuning the activity of Pt alloy electrocatalysts by means of the lanthanide contraction. Science, 2016, 352, 73-76.	12.6	783
66	Acetaldehyde as an Intermediate in the Electroreduction of Carbon Monoxide to Ethanol on Oxideâ€Derived Copper. Angewandte Chemie, 2016, 128, 1472-1476.	2.0	39
67	Acetaldehyde as an Intermediate in the Electroreduction of Carbon Monoxide to Ethanol on Oxideâ€Derived Copper. Angewandte Chemie - International Edition, 2016, 55, 1450-1454.	13.8	166
68	Opportunities and challenges in the electrocatalysis of CO2 and CO reduction using bifunctional surfaces: A theoretical and experimental study of Auâ€“Cd alloys. Journal of Catalysis, 2016, 343, 215-231.	6.2	115
69	Probing the nanoscale structure of the catalytically active overlayer on Pt alloys with rare earths. Nano Energy, 2016, 29, 249-260.	16.0	49
70	Fine-tuning the activity of oxygen evolution catalysts: The effect of oxidation pre-treatment on size-selected Ru nanoparticles. Catalysis Today, 2016, 262, 57-64.	4.4	27
71	Pt Gd alloy formation on Pt(111): Preparation and structural characterization. Surface Science, 2016, 652, 114-122.	1.9	16
72	Correlation between diffusion barriers and alloying energy in binary alloys. Physical Chemistry Chemical Physics, 2016, 18, 3302-3307.	2.8	33

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73	Toward an Active and Stable Catalyst for Oxygen Evolution in Acidic Media: Tiâ€Stabilized MnO₂. Advanced Energy Materials, 2015, 5, 1500991.	19.5	177
74	Determination of Coreâ€“Shell Structures in Pdâ€Hg Nanoparticles by STEMâ€EDX. ChemCatChem, 2015, 7, 3748-3752.	3.7	9
75	The enhanced activity of mass-selected Pt Gd nanoparticles for oxygen electroreduction. Journal of Catalysis, 2015, 328, 297-307.	6.2	83
76	Probing the Active Surface Sites for CO Reduction on Oxide-Derived Copper Electrocatalysts. Journal of the American Chemical Society, 2015, 137, 9808-9811.	13.7	516
77	Benchmarking Pt-based electrocatalysts for low temperature fuel cell reactions with the rotating disk electrode: oxygen reduction and hydrogen oxidation in the presence of CO (review article). Electrochimica Acta, 2015, 179, 647-657.	5.2	86
78	Direct observation of the dealloying process of a platinumâ€“yttrium nanoparticle fuel cell cathode and its oxygenated species during the oxygen reduction reaction. Physical Chemistry Chemical Physics, 2015, 17, 28121-28128.	2.8	54
79	The importance of being together. Science, 2015, 350, 164-165.	12.6	16
80	Oxygen evolution on well-characterized mass-selected Ru and RuO₂nanoparticles. Chemical Science, 2015, 6, 190-196.	7.4	298
81	Benchmarking the Stability of Oxygen Evolution Reaction Catalysts: The Importance of Monitoring Mass Losses. ChemElectroChem, 2014, 1, 2075-2081.	3.4	301
82	Elucidating the activity of stepped Pt single crystals for oxygen reduction. Physical Chemistry Chemical Physics, 2014, 16, 13625.	2.8	92
83	Towards the elucidation of the high oxygen electroreduction activity of Pt_xY: surface science and electrochemical studies of Y/Pt(111). Physical Chemistry Chemical Physics, 2014, 16, 13718-13725.	2.8	27
84	Enhanced activity and stability of Ptâ€“La and Ptâ€“Ce alloys for oxygen electroreduction: the elucidation of the active surface phase. Journal of Materials Chemistry A, 2014, 2, 4234.	10.3	105
85	Exploring the phase space of time of flight mass selected Pt_xY nanoparticles. Physical Chemistry Chemical Physics, 2014, 16, 26506-26513.	2.8	20
86	Iron-Treated NiO as a Highly Transparent p-Type Protection Layer for Efficient Si-Based Photoanodes. Journal of Physical Chemistry Letters, 2014, 5, 3456-3461.	4.6	93
87	Mass-selected nanoparticles of PtxY as model catalysts for oxygen electroreduction. Nature Chemistry, 2014, 6, 732-738.	13.6	298
88	Pt Skin Versus Pt Skeleton Structures of Pt3Sc as Electrocatalysts for Oxygen Reduction. Topics in Catalysis, 2014, 57, 245-254.	2.8	47
89	Trends in the Electrochemical Synthesis of H₂O₂: Enhancing Activity and Selectivity by Electrocatalytic Site Engineering. Nano Letters, 2014, 14, 1603-1608.	9.1	521
90	Enabling direct H2O2 production through rational electrocatalyst design. Nature Materials, 2013, 12, 1137-1143.	27.5	1,031

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91	CO₂ Electroreduction on Well-Defined Bimetallic Surfaces: Cu Overlayers on Pt(111) and Pt(211). Journal of Physical Chemistry C, 2013, 117, 20500-20508.	3.1	119
92	Activity and Selectivity for O₂ Reduction to H₂O₂ on Transition Metal Surfaces. ECS Transactions, 2013, 58, 53-62.	0.5	13
93	Correlating Microstructure and Activity for Polysulfide Reduction and Oxidation at WS2Electrocatalysts. Journal of the Electrochemical Society, 2013, 160, A757-A768.	2.9	23
94	Design of an Active Site towards Optimal Electrocatalysis: Overlayers, Surface Alloys and Nearâ€Surface Alloys of Cu/Pt(111). Angewandte Chemie - International Edition, 2012, 51, 11845-11848.	13.8	94
95	A cell for the controllable thermal treatment and electrochemical characterisation of single crystal alloy electrodes. Electrochemistry Communications, 2012, 23, 33-36.	4.7	25
96	Pt₅Gd as a Highly Active and Stable Catalyst for Oxygen Electroreduction. Journal of the American Chemical Society, 2012, 134, 16476-16479.	13.7	234
97	The effect of ammonia upon the electrocatalysis of hydrogen oxidation and oxygen reduction on polycrystalline platinum. Journal of Power Sources, 2012, 220, 205-210.	7.8	27
98	Probing adsorption phenomena on a single crystal Pt-alloy surface under oxygen reduction reaction conditions. Electrochimica Acta, 2012, 82, 517-523.	5.2	28
99	Understanding the electrocatalysis of oxygen reduction on platinum and its alloys. Energy and Environmental Science, 2012, 5, 6744.	30.8	991
100	The Effect of Size on the Oxygen Electroreduction Activity of Massâ€Selected Platinum Nanoparticles. Angewandte Chemie - International Edition, 2012, 51, 4641-4643.	13.8	319
101	Oxygen Electroreduction Activity and Xâ€Ray Photoelectron Spectroscopy of Platinum and Early Transition Metal Alloys. ChemCatChem, 2012, 4, 341-349.	3.7	84
102	Tuning the Activity of Pt(111) for Oxygen Electroreduction by Subsurface Alloying. Journal of the American Chemical Society, 2011, 133, 5485-5491.	13.7	447
103	The Pt(111)/Electrolyte Interface under Oxygen Reduction Reaction Conditions: An Electrochemical Impedance Spectroscopy Study. Langmuir, 2011, 27, 2058-2066.	3.5	170
104	Minimizing the Use of Platinum in Hydrogenâ€Evolving Electrodes. Angewandte Chemie - International Edition, 2011, 50, 1476-1477.	13.8	150
105	Identical locations transmission electron microscopy study of Pt/C electrocatalyst degradation during oxygen reduction reaction. Journal of Power Sources, 2011, 196, 6085-6091.	7.8	104
106	Alloys of platinum and early transition metals as oxygen reduction electrocatalysts. Nature Chemistry, 2009, 1, 552-556.	13.6	2,716
107	Ionic conductivity of Ce1âˆ’xNdxO2âˆ’x/2. Solid State Ionics, 2006, 177, 669-676.	2.7	76
108	<i>Operando</i> Measurement of Layer Breathing Modes in Lithiated Graphite. ACS Energy Letters, 0, , 1633-1638.	17.4	31