Hyung-Suk Oh

List of Publications by Year
in descending order

88 papers	7,010 citations	57631 44 h-index	58464 82 g-index
93 all docs	93 docs citations	93 times ranked	7438 citing authors

#	Article	IF	Citations
1	Metalâ€Doped Nitrogenated Carbon as an Efficient Catalyst for Direct CO₂ Electroreduction to CO and Hydrocarbons. Angewandte Chemie - International Edition, 2015, 54, 10758-10762.	7.2	504
2	Electrochemical Catalystâ€"Support Effects and Their Stabilizing Role for IrO_{<i>x</i>} Nanoparticle Catalysts during the Oxygen Evolution Reaction. Journal of the American Chemical Society, 2016, 138, 12552-12563.	6.6	451
3	A unique oxygen ligand environment facilitates water oxidation in hole-doped IrNiOx coreâ€"shell electrocatalysts. Nature Catalysis, 2018, 1, 841-851.	16.1	424
4	Mixed Copper States in Anodized Cu Electrocatalyst for Stable and Selective Ethylene Production from CO₂ Reduction. Journal of the American Chemical Society, 2018, 140, 8681-8689.	6.6	397
5	Electrochemical Fragmentation of Cu₂O Nanoparticles Enhancing Selective Câ€"C Coupling from CO₂ Reduction Reaction. Journal of the American Chemical Society, 2019, 141, 4624-4633.	6.6	390
6	Oxideâ€Supported IrNiO_{<i>x</i>} Coreâ€"Shell Particles as Efficient, Costâ€Effective, and Stable Catalysts for Electrochemical Water Splitting. Angewandte Chemie - International Edition, 2015, 54, 2975-2979.	7.2	384
7	Oxide-supported Ir nanodendrites with high activity and durability for the oxygen evolution reaction in acid PEM water electrolyzers. Chemical Science, 2015, 6, 3321-3328.	3.7	332
8	General technoeconomic analysis for electrochemical coproduction coupling carbon dioxide reduction with organic oxidation. Nature Communications, 2019, 10, 5193.	5.8	219
9	Electrode reconstruction strategy for oxygen evolution reaction: maintaining Fe-CoOOH phase with intermediate-spin state during electrolysis. Nature Communications, 2022, 13, 605.	5.8	149
10	Preparation of Mesoporous Sbâ€, Fâ€, and Inâ€Doped SnO₂ Bulk Powder with High Surface Area for Use as Catalyst Supports in Electrolytic Cells. Advanced Functional Materials, 2015, 25, 1074-1081.	7.8	127
11	Selective CO₂ Reduction on Zinc Electrocatalyst: The Effect of Zinc Oxidation State Induced by Pretreatment Environment. ACS Sustainable Chemistry and Engineering, 2017, 5, 11377-11386.	3.2	127
12	Investigation of carbon-supported Pt nanocatalyst preparation by the polyol process for fuel cell applications. Electrochimica Acta, 2007, 52, 7278-7285.	2.6	113
13	The role of transition metals in non-precious nitrogen-modified carbon-based electrocatalysts for oxygen reduction reaction. Journal of Power Sources, 2012, 212, 220-225.	4.0	112
14	Carbon-supported, nano-structured, manganese oxide composite electrode for electrochemical supercapacitor. Journal of Power Sources, 2007, 173, 1024-1028.	4.0	110
15	Identification of Single-Atom Ni Site Active toward Electrochemical CO₂ Conversion to CO. Journal of the American Chemical Society, 2021, 143, 925-933.	6.6	107
16	Selective electrochemical reduction of nitric oxide to hydroxylamine by atomically dispersed iron catalyst. Nature Communications, 2021, 12, 1856.	5.8	106
17	Activation of a Ni electrocatalyst through spontaneous transformation of nickel sulfide to nickel hydroxide in an oxygen evolution reaction. Applied Catalysis B: Environmental, 2018, 233, 130-135.	10.8	103
18	Effect of operating conditions on carbon corrosion in polymer electrolyte membrane fuel cells. Journal of Power Sources, 2009, 193, 575-579.	4.0	100

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19	Corrosion resistance and sintering effect of carbon supports in polymer electrolyte membrane fuel cells. Electrochimica Acta, 2009, 54, 6515-6521.	2.6	92
20	Theoretical and Experimental Understanding of Hydrogen Evolution Reaction Kinetics in Alkaline Electrolytes with Pt-Based Coreâ€“Shell Nanocrystals. Journal of the American Chemical Society, 2019, 141, 18256-18263.	6.6	91
21	Nanocatalyst Design for Longâ€Term Operation of Proton/Anion Exchange Membrane Water Electrolysis. Advanced Energy Materials, 2021, 11, 2003188.	10.2	89
22	Development of highly active and stable non-precious oxygen reduction catalysts for PEM fuel cells using polypyrrole and a chelating agent. Electrochemistry Communications, 2011, 13, 879-881.	2.3	87
23	The influence of the structural properties of carbon on the oxygen reduction reaction of nitrogen modified carbon based catalysts. International Journal of Hydrogen Energy, 2011, 36, 8181-8186.	3.8	81
24	On-line mass spectrometry study of carbon corrosion in polymer electrolyte membrane fuel cells. Electrochemistry Communications, 2008, 10, 1048-1051.	2.3	80
25	Modification of polyol process for synthesis of highly platinum loaded platinumâ€“carbon catalysts for fuel cells. Journal of Power Sources, 2008, 183, 600-603.	4.0	79
26	Effect of chemical oxidation of CNFs on the electrochemical carbon corrosion in polymer electrolyte membrane fuel cells. International Journal of Hydrogen Energy, 2010, 35, 701-708.	3.8	79
27	High crystallinity design of Ir-based catalysts drives catalytic reversibility for water electrolysis and fuel cells. Nature Communications, 2021, 12, 4271.	5.8	75
28	Efficient Synthesis of Pt Nanoparticles Supported on Hydrophobic Graphitized Carbon Nanofibers for Electrocatalysts Using Noncovalent Functionalization. Advanced Functional Materials, 2011, 21, 3954-3960.	7.8	74
29	Highly selective and scalable CO2 to CO - Electrolysis using coral-nanostructured Ag catalysts in zero-gap configuration. Nano Energy, 2020, 76, 105030.	8.2	73
30	Single-atom catalysts for the oxygen evolution reaction: recent developments and future perspectives. Chemical Communications, 2020, 56, 12687-12697.	2.2	69
31	Evidence of Marsâ€Vanâ€Krevelen Mechanism in the Electrochemical Oxygen Evolution on Niâ€Based Catalysts. Angewandte Chemie - International Edition, 2021, 60, 14981-14988.	7.2	67
32	Metalâ€“Oxide Interfaces for Selective Electrochemical Câ€“C Coupling Reactions. ACS Energy Letters, 2019, 4, 2241-2248.	8.8	62
33	Exploring dopant effects in stannic oxide nanoparticles for CO2 electro-reduction to formate. Nature Communications, 2022, 13, 2205.	5.8	61
34	Electrochemical carbon corrosion in high temperature proton exchange membrane fuel cells. International Journal of Hydrogen Energy, 2012, 37, 10844-10849.	3.8	60
35	Mass Transport Control by Surface Graphene Oxide for Selective CO Production from Electrochemical CO₂ Reduction. ACS Catalysis, 2020, 10, 3222-3231.	5.5	57
36	Effect of halides on nanoporous Zn-based catalysts for highly efficient electroreduction of CO2 to CO. Catalysis Communications, 2018, 114, 109-113.	1.6	55

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37	Achieving 14.4% Alcohol-Based Solution-Processed Cu(In,Ga)(S,Se)₂ Thin Film Solar Cell through Interface Engineering. ACS Applied Materials & Interfaces, 2018, 10, 9894-9899.	4.0	54
38	Carbon-Supported IrCoO nanoparticles as an efficient and stable OER electrocatalyst for practicable CO2 electrolysis. Applied Catalysis B: Environmental, 2020, 269, 118820.	10.8	54
39	Interface rich CuO/Al₂CuO₄ surface for selective ethylene production from electrochemical CO₂ conversion. Energy and Environmental Science, 2022, 15, 2397-2409.	15.6	54
40	Quantification of Active Site Density and Turnover Frequency: From Single-Atom Metal to Nanoparticle Electrocatalysts. Jacs Au, 2021, 1, 586-597.	3.6	53
41	Growth and characterization of carbon-supported MnO2 nanorods for supercapacitor electrode. Physica B: Condensed Matter, 2008, 403, 1763-1769.	1.3	48
42	Highly stable and ordered intermetallic PtCo alloy catalyst supported on graphitized carbon containing Co@CN for oxygen reduction reaction. Journal of Materials Chemistry A, 2020, 8, 19833-19842.	5.2	47
43	Collaborative Electrochemical Oxidation of the Alcohol and Aldehyde Groups of 5-Hydroxymethylfurfural by NiOOH and Cu(OH)₂ for Superior 2,5-Furandicarboxylic Acid Production. ACS Catalysis, 2022, 12, 4078-4091.	5.5	45
44	Oxideâ€Supported IrNiO_{<i>x</i>} Coreâ€“Shell Particles as Efficient, Costâ€Effective, and Stable Catalysts for Electrochemical Water Splitting. Angewandte Chemie, 2015, 127, 3018-3022.	1.6	44
45	Selective H2O2 production on surface-oxidized metal-nitrogen-carbon electrocatalysts. Catalysis Today, 2021, 359, 99-105.	2.2	42
46	Effect of Pt introduced on Ru-based electrocatalyst for oxygen evolution activity and stability. Electrochemistry Communications, 2019, 104, 106469.	2.3	40
47	Effects of metal or metal oxide additives on oxidative coupling of methane using Na2WO4/SiO2 catalysts: Reducibility of metal additives to manipulate the catalytic activity. Applied Catalysis A: General, 2018, 562, 114-119.	2.2	39
48	Controlling the C2+ product selectivity of electrochemical CO₂reduction on an electrosprayed Cu catalyst. Journal of Materials Chemistry A, 2020, 8, 6210-6218.	5.2	37
49	<i>Operando</i> Stability of Platinum Electrocatalysts in Ammonia Oxidation Reactions. ACS Catalysis, 2020, 10, 11674-11684.	5.5	36
50	Highly selective and stackable electrode design for gaseous CO2 electroreduction to ethylene in a zero-gap configuration. Nano Energy, 2021, 84, 105859.	8.2	36
51	Polypyrrole-modified hydrophobic carbon nanotubes as promising electrocatalyst supports in polymer electrolyte membrane fuel cells. International Journal of Hydrogen Energy, 2011, 36, 11564-11571.	3.8	35
52	Vertical-crystalline Fe-doped Î2-Ni oxyhydroxides for highly active and stable oxygen evolution reaction. Matter, 2021, 4, 3585-3604.	5.0	34
53	Effect of heat-treatment temperature on carbon corrosion in polymer electrolyte membrane fuel cells. Journal of Power Sources, 2010, 195, 2623-2627.	4.0	33
54	Use of a carbon nanocage as a catalyst support in polymer electrolyte membrane fuel cells. Electrochemistry Communications, 2009, 11, 1131-1134.	2.3	32

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55	Oxygen Vacancies Induced NiFe-Hydroxide as a Scalable, Efficient, and Stable Electrode for Alkaline Overall Water Splitting. ACS Sustainable Chemistry and Engineering, 2020, 8, 14071-14081.	3.2	32
56	Real-time monitoring of electrochemical carbon corrosion in alkaline media. Journal of Materials Chemistry A, 2021, 9, 19834-19839.	5.2	29
57	Modification of electrodes using Al2O3 to reduce phosphoric acid loss and increase the performance of high-temperature proton exchange membrane fuel cells. Journal of Materials Chemistry A, 2013, 1, 2578.	5.2	27
58	Crystal Phase Transition Creates a Highly Active and Stable RuC<i>_X</i> Nanosurface for Hydrogen Evolution Reaction in Alkaline Media. Advanced Materials, 2021, 33, e2105248.	11.1	27
59	A catalyst design for selective electrochemical reactions: direct production of hydrogen peroxide in advanced electrochemical oxidation. Journal of Materials Chemistry A, 2020, 8, 9859-9870.	5.2	26
60	Unraveling CoNiPâ€’CoP₂ 3Dâ€onâ€1D Hybrid Nanoarchitecture for Longâ€Lasting Electrochemical Hybrid Cells and Oxygen Evolution Reaction. Advanced Science, 2022, 9, e2104877.	5.6	26
61	Sloughing a Precursor Layer to Expose Active Stainless Steel Catalyst for Water Oxidation. ACS Applied Materials & Interfaces, 2018, 10, 24499-24507.	4.0	25
62	Improving the oxygen evolution reaction using electronic structure modulation of sulfur-retaining nickel-based electrocatalysts. Journal of Materials Chemistry A, 2021, 9, 27034-27040.	5.2	25
63	Preparation of carbon-supported nanosegregated Pt alloy catalysts for the oxygen reduction reaction using a silica encapsulation process to inhibit the sintering effect during heat treatment. Journal of Materials Chemistry, 2012, 22, 15215.	6.7	23
64	Turning Harmful Deposition of Metal Impurities into Activation of Nitrogen-Doped Carbon Catalyst toward Durable Electrochemical CO₂ Reduction. ACS Energy Letters, 2019, 4, 2343-2350.	8.8	23
65	Design of less than 1Ânm Scale Spaces on SnO₂ Nanoparticles for Highâ€Performance Electrochemical CO₂ Reduction. Advanced Functional Materials, 2022, 32, 2107349.	7.8	23
66	Understanding the Grain Boundary Behavior of Bimetallic Platinumâ€“Cobalt Alloy Nanowires toward Oxygen Electro-Reduction. ACS Catalysis, 2022, 12, 3516-3523.	5.5	23
67	Design methodology for mass transfer-enhanced large-scale electrochemical reactor for CO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" id="d1e969" altimg="si32.svg"><mml:msub><mml:mrow /><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:math> reduction. Chemical Engineering Journal, 2021, 424, 130265.	6.6	21
68	W@Ag dendrites as efficient and durable electrocatalyst for solar-to-CO conversion using scalable photovoltaic-electrochemical system. Applied Catalysis B: Environmental, 2021, 297, 120427.	10.8	20
69	Achieving tolerant CO2 electro-reduction catalyst in real water matrix. Applied Catalysis B: Environmental, 2019, 258, 117961.	10.8	19
70	Monolithic Lead Halide Perovskite Photoelectrochemical Cell with 9.16% Applied Bias Photon-to-Current Efficiency. ACS Energy Letters, 2022, 7, 320-327.	8.8	19
71	Novel method for the preparation of carbon supported nano-sized amorphous ruthenium oxides for supercapacitors. Electrochemistry Communications, 2008, 10, 1035-1037.	2.3	18
72	Understanding Selective Reduction of CO 2 to CO on Modified Carbon Electrocatalysts. ChemElectroChem, 2018, 5, 1615-1621.	1.7	16

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73	Microenvironments of Cu catalysts in zero-gap membrane electrode assembly for efficient CO₂ electrolysis to C₂₊ products. Journal of Materials Chemistry A, 2022, 10, 10363-10372.	5.2	16
74	Understanding morphological degradation of Ag nanoparticle during electrochemical CO2 reduction reaction by identical location observation. Electrochimica Acta, 2021, 371, 137795.	2.6	15
75	Electroactivation-induced IrNi nanoparticles under different pH conditions for neutral water oxidation. Nanoscale, 2020, 12, 14903-14910.	2.8	14
76	New strategies for economically feasible CO₂ electroreduction using a porous membrane in zero-gap configuration. Journal of Materials Chemistry A, 2021, 9, 16169-16177.	5.2	14
77	A highly efficient Cu(In,Ga)(S,Se)2 photocathode without a hetero-materials overlayer for solar-hydrogen production. Scientific Reports, 2018, 8, 5182.	1.6	13
78	Data-driven pilot optimization for electrochemical CO mass production. Journal of Materials Chemistry A, 2020, 8, 16943-16950.	5.2	12
79	Achieving over 15% Efficiency in Solution-Processed Cu(In,Ga)(S,Se)₂ Thin-Film Solar Cells via a Heterogeneous-Formation-Induced Benign pâ€“n Junction Interface. ACS Applied Materials & Interfaces, 2021, 13, 13289-13300.	4.0	12
80	Enhancement of Catalytic Activity and Selectivity for the Gaseous Electroreduction of CO₂ to CO: Guidelines for the Selection of Carbon Supports. Advanced Sustainable Systems, 2021, 5, 2100216.	2.7	10
81	Thermo-selenized stainless steel as an efficient oxygen evolution electrode for water splitting and CO2 electrolysis in real water matrices. Journal of Power Sources, 2022, 521, 230953.	4.0	10
82	Evidence of Marsâ€Vanâ€Krevelen Mechanism in the Electrochemical Oxygen Evolution on Niâ€Based Catalysts. Angewandte Chemie, 2021, 133, 15108-15115.	1.6	9
83	Insight into water oxidation activity enhancement of Ni-based electrocatalysts interacting with modified carbon supports. Electrochimica Acta, 2018, 281, 684-691.	2.6	8
84	Noncovalent Modification of Carbon Nanofibers Using 2-Naphthalenethiol for Catalyst Supports in PEM Fuel Cells. Journal of Electrochemical Science and Technology, 2010, 1, 92-96.	0.9	4
85	Unraveling the role of introduced W in oxidation tolerance for Pt-based catalysts via on-line inductive coupled plasma-mass spectrometry. Electrochemistry Communications, 2022, 139, 107301.	2.3	1
86	Vertical Alignment of Fe-Doped <i>Î²</i>â€‘Ni Oxyhydroxides for Highly Active and Stable Oxygen Evolution Reaction. SSRN Electronic Journal, 0, , .	0.4	0
87	Effect of Acid Treatment of Graphitized Carbon on Carbon Corrosion in Polymer Electrolyte Membrane Fuel Cells. Journal of the Korean Electrochemical Society, 2009, 12, 181-188.	0.1	0
88	Effect of Graphitized Carbon Supports on Electrochemical Carbon Corrosion in Polymer Electrolyte Membrane Fuel Cells. Journal of the Korean Electrochemical Society, 2009, 12, 142-147.	0.1	0