Alexander Cowan

List of Publications by Year
in descending order

84 papers	6,727 citations	71102 41 h-index	60623 81 g-index
88 all docs	88 docs citations	88 times ranked	7660 citing authors

#	Article	IF	Citations
1	Manganese Carbonyl Complexes as Selective Electrocatalysts for CO₂ Reduction in Water and Organic Solvents. Accounts of Chemical Research, 2022, 55, 955-965.	15.6	17
2	Photocatalytic Overall Water Splitting Under Visible Light Enabled by a Particulate Conjugated Polymer Loaded with Palladium and Iridium**. Angewandte Chemie, 2022, 134, .	2.0	7
3	Photocatalytic Overall Water Splitting Under Visible Light Enabled by a Particulate Conjugated Polymer Loaded with Palladium and Iridium**. Angewandte Chemie - International Edition, 2022, 61, .	13.8	40
4	Tuning the local chemical environment of ZnSe quantum dots with dithiols towards photocatalytic CO₂ reduction. Chemical Science, 2022, 13, 5988-5998.	7.4	15
5	Zero-Gap Bipolar Membrane Electrolyzer for Carbon Dioxide Reduction Using Acid-Tolerant Molecular Electrocatalysts. Journal of the American Chemical Society, 2022, 144, 7551-7556.	13.7	52
6	Dynamics of Solidâ€Electrolyte Interphase Formation on Silicon Electrodes Revealed by Combinatorial Electrochemical Screening. Angewandte Chemie - International Edition, 2022, 61, .	13.8	32
7	Thermal catalytic conversion: general discussion. Faraday Discussions, 2021, 230, 124-151.	3.2	0
8	Electrochemical carbon dioxide reduction in ionic liquids at high pressure. Faraday Discussions, 2021, 230, 331-343.	3.2	12
9	Hybrid Photocathodes for Carbon Dioxide Reduction: Interfaces for Charge Separation and Selective Catalysis. ChemPhotoChem, 2021, 5, 595-610.	3.0	6
10	Water electrolysis: Direct from the sea or not to be?. Joule, 2021, 5, 1921-1923.	24.0	63
11	Noncovalent immobilization of a nickel cyclam catalyst on carbon electrodes for CO2 reduction using aqueous electrolyte. Electrochimica Acta, 2021, 392, 139015.	5.2	9
12	Emerging technologies: general discussion. Faraday Discussions, 2021, 230, 388-412.	3.2	0
13	How to go beyond C₁ products with electrochemical reduction of CO₂. Sustainable Energy and Fuels, 2021, 5, 5893-5914.	4.9	19
14	Time-Resolved Raman Spectroscopy of Polaron Formation in a Polymer Photocatalyst. Journal of Physical Chemistry Letters, 2021, 12, 10899-10905.	4.6	11
15	Water oxidation intermediates on iridium oxide electrodes probed by <i>in situ</i> electrochemical SHINERS. Chemical Communications, 2020, 56, 1129-1132.	4.1	41
16	A stable covalent organic framework for photocatalytic carbon dioxide reduction. Chemical Science, 2020, 11, 543-550.	7.4	265
17	Potential and pitfalls: On the use of transient absorption spectroscopy for <i>in situ</i> and operando studies of photoelectrodes. Journal of Chemical Physics, 2020, 153, 150901.	3.0	18
18	Photocatalyst Z-scheme system composed of a linear conjugated polymer and BiVO₄ for overall water splitting under visible light. Journal of Materials Chemistry A, 2020, 8, 16283-16290.	10.3	52

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19	Highly Efficient and Selective Metal Oxy-Boride Electrocatalysts for Oxygen Evolution from Alkali and Saline Solutions. ACS Applied Energy Materials, 2020, 3, 7619-7628.	5.1	54
20	Controlling Photocatalytic Activity by Selfâ€Assembly â€“ Tuning Perylene Bisimide Photocatalysts for the Hydrogen Evolution Reaction. Advanced Energy Materials, 2020, 10, 2002469.	19.5	33
21	Alkaline Water Oxidation Using a Bimetallic Phosphoâ€Boride Electrocatalyst. ChemSusChem, 2020, 13, 6534-6540.	6.8	8
22	Water Oxidation with Cobaltâ€Loaded Linear Conjugated Polymer Photocatalysts. Angewandte Chemie, 2020, 132, 18854-18859.	2.0	16
23	Water Oxidation with Cobaltâ€Loaded Linear Conjugated Polymer Photocatalysts. Angewandte Chemie - International Edition, 2020, 59, 18695-18700.	13.8	55
24	Electrolysis of low-grade and saline surface water. Nature Energy, 2020, 5, 367-377.	39.5	579
25	Strong Impact of Intramolecular Hydrogen Bonding on the Cathodic Path of [Re(3,3â€²-dihydroxy-2,2â€²-bipyridine)(CO)3Cl] and Catalytic Reduction of Carbon Dioxide. Inorganic Chemistry, 2020, 59, 5564-5578.	4.0	22
26	Solar to fuel: Recent developments in conversion of sunlight into high value chemicals. APL Materials, 2020, 8, .	5.1	2
27	Water-Soluble Manganese Complex for Selective Electrocatalytic CO₂ Reduction to CO. Organometallics, 2019, 38, 1224-1229.	2.3	28
28	Metalâ€“organic conjugated microporous polymer containing a carbon dioxide reduction electrocatalyst. Sustainable Energy and Fuels, 2019, 3, 2990-2994.	4.9	16
29	Photocatalytically active ladder polymers. Faraday Discussions, 2019, 215, 84-97.	3.2	20
30	Vibrational sum-frequency generation spectroscopy of electrode surfaces: studying the mechanisms of sustainable fuel generation and utilisation. Physical Chemistry Chemical Physics, 2019, 21, 12067-12086.	2.8	29
31	Advanced Spectroelectrochemical Techniques to Study Electrode Interfaces Within Lithium-Ion and Lithium-Oxygen Batteries. Annual Review of Analytical Chemistry, 2019, 12, 323-346.	5.4	39
32	<i>In situ</i> study of the low overpotential â€œdimer pathwayâ€•for electrocatalytic carbon dioxide reduction by manganese carbonyl complexes. Physical Chemistry Chemical Physics, 2019, 21, 7389-7397.	2.8	21
33	Gelation enabled charge separation following visible light excitation using self-assembled perylene bisimides. Physical Chemistry Chemical Physics, 2019, 21, 26466-26476.	2.8	12
34	Directing the mechanism of CO₂ reduction by a Mn catalyst through surface immobilization. Physical Chemistry Chemical Physics, 2018, 20, 6811-6816.	2.8	26
35	ZnSe quantum dots modified with a Ni(cyclam) catalyst for efficient visible-light driven CO₂ reduction in water. Chemical Science, 2018, 9, 2501-2509.	7.4	127
36	Stable Ta₂O₅ Overlayers on Hematite for Enhanced Photoelectrochemical Water Splitting Efficiencies. ChemPhotoChem, 2018, 2, 183-189.	3.0	15

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37	Detection of catalytic intermediates at an electrode surface during carbon dioxide reduction by an earth-abundant catalyst. Nature Catalysis, 2018, 1, 952-959.	34.4	59
38	Rationalizing the Efficiency of Hydrogen-Treated TiO2 Nanomaterials in Light Driven Water-Splitting Applications. , 2017, , 215-248.		0
39	Hydrophilic, Hole-Delocalizing Ligand Shell to Promote Charge Transfer from Colloidal CdSe Quantum Dots in Water. Journal of Physical Chemistry C, 2017, 121, 15160-15168.	3.1	16
40	pH dependent photocatalytic hydrogen evolution by self-assembled perylene bisimides. Journal of Materials Chemistry A, 2017, 5, 7555-7563.	10.3	39
41	Time-Resolved Spectroscopy of ZnTe Photocathodes for Solar Fuel Production. Journal of Physical Chemistry C, 2017, 121, 22073-22080.	3.1	18
42	A Solutionâ€Processable Polymer Photocatalyst for Hydrogen Evolution from Water. Advanced Energy Materials, 2017, 7, 1700479.	19.5	135
43	The Role of Electrodeâ€“Catalyst Interactions in Enabling Efficient CO₂ Reduction with Mo(bpy)(CO)₄ As Revealed by Vibrational Sum-Frequency Generation Spectroscopy. Journal of the American Chemical Society, 2017, 139, 13791-13797.	13.7	48
44	Self-sorted photoconductive xerogels. Chemical Science, 2016, 7, 6499-6505.	7.4	63
45	Acid Treatment Enables Suppression of Electronâ€“Hole Recombination in Hematite for Photoelectrochemical Water Splitting. Angewandte Chemie - International Edition, 2016, 55, 3403-3407.	13.8	132
46	Acid Treatment Enables Suppression of Electronâ€“Hole Recombination in Hematite for Photoelectrochemical Water Splitting. Angewandte Chemie, 2016, 128, 3464-3468.	2.0	27
47	Controlling Visible Light Driven Photoconductivity in Self-Assembled Perylene Bisimide Structures. Journal of Physical Chemistry C, 2016, 120, 18479-18486.	3.1	40
48	Design of a highly photocatalytically active ZnO/CuWO 4 nanocomposite. Journal of Colloid and Interface Science, 2016, 483, 93-101.	9.4	30
49	Photochemical CO₂ reduction using structurally controlled g-C₃N₄. Physical Chemistry Chemical Physics, 2016, 18, 24825-24829.	2.8	89
50	Intermediate identification. Nature Chemistry, 2016, 8, 740-741.	13.6	11
51	Photochemical CO₂ reduction in water using a co-immobilised nickel catalyst and a visible light sensitiser. Chemical Communications, 2016, 52, 14200-14203.	4.1	48
52	A highly active nickel electrocatalyst shows excellent selectivity for CO₂ reduction in acidic media. Chemical Science, 2016, 7, 1521-1526.	7.4	74
53	Capture agents, conversion mechanisms, biotransformations and biomimetics: general discussion. Faraday Discussions, 2015, 183, 463-487.	3.2	1
54	A functionalised nickel cyclam catalyst for CO₂ reduction: electrocatalysis, semiconductor surface immobilisation and light-driven electron transfer. Physical Chemistry Chemical Physics, 2015, 17, 1562-1566.	2.8	58

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55	Oxygen deficient Î±-Fe₂O₃ photoelectrodes: a balance between enhanced electrical properties and trap-mediated losses. Chemical Science, 2015, 6, 4009-4016.	7.4	92
56	Improving the efficiency of electrochemical CO₂ reduction using immobilized manganese complexes. Faraday Discussions, 2015, 183, 147-160.	3.2	75
57	CO₂reduction reactions: general discussion. Faraday Discussions, 2015, 183, 261-290.	3.2	6
58	Photocatalytic Water Oxidation by a Pyrochlore Oxide upon Irradiation with Visible Light: Rhodium Substitution Into Yttrium Titanate. Angewandte Chemie - International Edition, 2014, 53, 14480-14484.	13.8	29
59	Interfacial charge separation in Cu₂O/RuO_x as a visible light driven CO₂ reduction catalyst. Physical Chemistry Chemical Physics, 2014, 16, 5922-5926.	2.8	55
60	Electrocatalytic CO2 reduction with a membrane supported manganese catalyst in aqueous solution. Chemical Communications, 2014, 50, 12698-12701.	4.1	81
61	Air-stable photoconductive films formed from perylene bisimide gelators. Journal of Materials Chemistry C, 2014, 2, 5570-5575.	5.5	85
62	Charge carrier separation in nanostructured TiO2 photoelectrodes for water splitting. Physical Chemistry Chemical Physics, 2013, 15, 8772.	2.8	58
63	Charge carrier trapping, recombination and transfer in hematite (Î±-Fe2O3) water splitting photoanodes. Chemical Science, 2013, 4, 2724.	7.4	419
64	Efficient Suppression of Electronâ€"Hole Recombination in Oxygen-Deficient Hydrogen-Treated TiO₂ Nanowires for Photoelectrochemical Water Splitting. Journal of Physical Chemistry C, 2013, 117, 25837-25844.	3.1	222
65	Long-lived charge separated states in nanostructured semiconductor photoelectrodes for the production of solar fuels. Chemical Society Reviews, 2013, 42, 2281-2293.	38.1	310
66	Dynamics of photogenerated holes in surface modified Î±-Fe ₂ O ₃ photoanodes for solar water splitting. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 15640-15645.	7.1	413
67	Correlating long-lived photogenerated hole populations with photocurrent densities in hematite water oxidation photoanodes. Energy and Environmental Science, 2012, 5, 6304-6312.	30.8	196
68	Mechanism of O₂ Production from Water Splitting: Nature of Charge Carriers in Nitrogen Doped Nanocrystalline TiO₂ Films and Factors Limiting O₂ Production. Journal of Physical Chemistry C, 2011, 115, 3143-3150.	3.1	123
69	Charge Carrier Dynamics on Mesoporous WO₃ during Water Splitting. Journal of Physical Chemistry Letters, 2011, 2, 1900-1903.	4.6	142
70	The Role of Cobalt Phosphate in Enhancing the Photocatalytic Activity of Î±-Fe₂O₃ toward Water Oxidation. Journal of the American Chemical Society, 2011, 133, 14868-14871.	13.7	533
71	Dynamics of photogenerated holes in nanocrystalline Î±-Fe₂O₃electrodes for water oxidation probed by transient absorption spectroscopy. Chemical Communications, 2011, 47, 716-718.	4.1	261
72	Activation Energies for the Rate-Limiting Step in Water Photooxidation by Nanostructured Î±-Fe₂O₃ and TiO₂. Journal of the American Chemical Society, 2011, 133, 10134-10140.	13.7	247

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73	Water Splitting by Nanocrystalline TiO₂ in a Complete Photoelectrochemical Cell Exhibits Efficiencies Limited by Charge Recombination. Journal of Physical Chemistry C, 2010, 114, 4208-4214.	3.1	228
74	A Combined Theoretical and Experimental Study on the Role of Spin States in the Chemistry of Fe(CO)5 Photoproducts. Journal of the American Chemical Society, 2009, 131, 3583-3592.	13.7	117
75	Formation and reactivity of organometallic alkane complexes. Coordination Chemistry Reviews, 2008, 252, 2504-2511.	18.8	61
76	Cell Design for Picosecond Time-Resolved Infrared Spectroscopy in High-Pressure Liquids and Supercritical Fluids. Applied Spectroscopy, 2008, 62, 24-29.	2.2	6
77	A delicate balance of complexation vs. activation of alkanes interacting with [Re(Cp)(CO)(PF3)] studied with NMR and time-resolved IR spectroscopy. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 6927-6932.	7.1	67
78	Time-resolved infrared (TRIR) study on the formation and reactivity of organometallic methane and ethane complexes in room temperature solution. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 6933-6938.	7.1	57
79	Ultrafast IR spectroscopy of the short-lived transients formed by UV excitation of cytosine derivatives. Chemical Communications, 2007, , 2130.	4.1	47
80	Monitoring the direct and indirect damage of DNA bases and polynucleotides by using time-resolved infrared spectroscopy. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 2150-2153.	7.1	64
81	A Sequential Molecular Mechanics/Quantum Mechanics Study of the Electronic Spectra of Amides. Journal of the American Chemical Society, 2004, 126, 13502-13511.	13.7	68
82	Sum-Frequency and Surface Sensitive Spectroscopy of Electrode and Photoelectrode Surfaces. , 0, , .		0
83	Sum-Frequency and Surface Sensitive Spectroscopy of Electrode and Photoelectrode Surfaces. , 0, , .		0
84	Dynamics of Solidâ€Electrolyte Interphase Formation on Silicon Electrodes Revealed by Combinatorial Electrochemical Screening. Angewandte Chemie, 0, , .	2.0	2