List of Publications by Year
in descending order

93 papers	9,985 citations	38660 50 h-index	43802 91 g-index
100 all docs	100 docs citations	100 times ranked	8378 citing authors

#	Article	IF	Citations
1	Synthetic Water-Oxidation Catalysts for Artificial Photosynthetic Water Oxidationâ€. Chemical Reviews, 1997, 97, 1-24.	23.0	734
2	Aquatic phototrophs: efficient alternatives to land-based crops for biofuels. Current Opinion in Biotechnology, 2008, 19, 235-240.	3.3	620
3	Photochemical Water Oxidation by Crystalline Polymorphs of Manganese Oxides: Structural Requirements for Catalysis. Journal of the American Chemical Society, 2013, 135, 3494-3501.	6.6	561
4	Development of Bioinspired Mn₄O₄â˜Cubane Water Oxidation Catalysts: Lessons from Photosynthesis. Accounts of Chemical Research, 2009, 42, 1935-1943.	7.6	510
5	Manganese Enzymes with Binuclear Active Sites. Chemical Reviews, 1996, 96, 2909-2926.	23.0	502
6	Solar Driven Water Oxidation by a Bioinspired Manganese Molecular Catalyst. Journal of the American Chemical Society, 2010, 132, 2892-2894.	6.6	414
7	A Co₄O₄ â€œCubaneâ€•Water Oxidation Catalyst Inspired by Photosynthesis. Journal of the American Chemical Society, 2011, 133, 11446-11449.	6.6	331
8	Photosystem II: The Reaction Center of Oxygenic Photosynthesis. Annual Review of Biochemistry, 2013, 82, 577-606.	5.0	330
9	Increased Lipid Accumulation in the Chlamydomonas reinhardtii <i>sta7-10</i> Starchless Isoamylase Mutant and Increased Carbohydrate Synthesis in Complemented Strains. Eukaryotic Cell, 2010, 9, 1251-1261.	3.4	317
10	Photosynthesis: a blueprint for solar energy capture and biohydrogen production technologies. Photochemical and Photobiological Sciences, 2005, 4, 957.	1.6	284
11	Sustained Water Oxidation Photocatalysis by a Bioinspired Manganese Cluster. Angewandte Chemie - International Edition, 2008, 47, 7335-7338.	7.2	269
12	Water Oxidation by Î»-MnO₂: Catalysis by the Cubical Mn₄O₄ Subcluster Obtained by Delithiation of Spinel LiMn₂O₄. Journal of the American Chemical Society, 2010, 132, 11467-11469.	6.6	267
13	Binuclear manganese(III) complexes of potential biological significance. Journal of the American Chemical Society, 1987, 109, 1435-1444.	6.6	258
14	Mixed valence interactions in di-.mu.-oxo bridged manganese complexes. Electron paramagnetic resonance and magnetic susceptibility studies. Journal of the American Chemical Society, 1978, 100, 7248-7252.	6.6	206
15	THE METAL CENTERS OF THE PHOTOSYNTHETIC OXYGENâ€EVOLVING COMPLEX *. Photochemistry and Photobiology, 1986, 43, 99-115.	1.3	199
16	Orbital Configuration of the Valence Electrons, Ligand Field Symmetry, and Manganese Oxidation States of the Photosynthetic Water Oxidizing Complex:Â Analysis of the S2State Multiline EPR Signalsâ€. Inorganic Chemistry, 1996, 35, 3307-3319.	1.9	198
17	Photoassembly of the water-oxidizing complex in photosystem II. Coordination Chemistry Reviews, 2008, 252, 347-360.	9.5	163
18	A calcium-specific site influences the structure and activity of the manganese cluster responsible for photosynthetic water oxidation. Biochemistry, 1989, 28, 9459-9464.	1.2	162

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19	Coordination Geometry and Oxidation State Requirements of Corner-Sharing MnO₆ Octahedra for Water Oxidation Catalysis: An Investigation of Manganite (Î³-MnOOH). ACS Catalysis, 2016, 6, 2089-2099.	5.5	156
20	Structural Requirements in Lithium Cobalt Oxides for the Catalytic Oxidation of Water. Angewandte Chemie - International Edition, 2012, 51, 1616-1619.	7.2	150
21	Redirecting Reductant Flux into Hydrogen Production via Metabolic Engineering of Fermentative Carbon Metabolism in a Cyanobacterium. Applied and Environmental Microbiology, 2010, 76, 5032-5038.	1.4	142
22	Synthesis and Characterization of Mn4O4L6Complexes with Cubane-like Core Structure:Â A New Class of Models of the Active Site of the Photosynthetic Water Oxidase. Journal of the American Chemical Society, 1997, 119, 6670-6671.	6.6	140
23	Molecular water-oxidation catalysts for photoelectrochemical cells. Dalton Transactions, 2009, , 9374.	1.6	124
24	How fast can Photosystem II split water? Kinetic performance at high and low frequencies. Photosynthesis Research, 2005, 84, 355-365.	1.6	113
25	Optimization of Metabolic Capacity and Flux through Environmental Cues To Maximize Hydrogen Production by the Cyanobacterium â€œ <i>Arthrospira</i> (<i>Spirulina</i>) <i>maxima</i> â€• Applied and Environmental Microbiology, 2008, 74, 6102-6113.	1.4	113
26	Protonation and Dehydration Reactions of the Mn4O4L6Cubane and Synthesis and Crystal Structure of the Oxidized Cubane [Mn4O4L6]+: A Model for the Photosynthetic Water Oxidizing Complex. Inorganic Chemistry, 1999, 38, 1036-1037.	1.9	96
27	Quantitative Kinetic Model for Photoassembly of the Photosynthetic Water Oxidase from Its Inorganic Constituents:Â Requirements for Manganese and Calcium in the Kinetically Resolved Stepsâ€‚â€¡. Biochemistry, 1997, 36, 8914-8922.	1.2	90
28	Selective Photoproduction of O2 from the Mn4O4 Cubane Core: A Structural and Functional Model for the Photosynthetic Water-Oxidizing Complex. Angewandte Chemie - International Edition, 2001, 40, 2925-2928.	7.2	88
29	Boosting Autofermentation Rates and Product Yields with Sodium Stress Cycling: Application to Production of Renewable Fuels by Cyanobacteria. Applied and Environmental Microbiology, 2010, 76, 6455-6462.	1.4	86
30	Assembly of the Tetra-Mn Site of Photosynthetic Water Oxidation by Photoactivation:Â Mn Stoichiometry and Detection of a New Intermediateâ€. Biochemistry, 1996, 35, 4102-4109.	1.2	83
31	Sustained Water Oxidation by [Mn₄O₄]⁷⁺ Core Complexes Inspired by Oxygenic Photosynthesis. Inorganic Chemistry, 2009, 48, 7269-7279.	1.9	83
32	Structural basis for differing electrocatalytic water oxidation by the cubic, layered and spinel forms of lithium cobalt oxides. Energy and Environmental Science, 2016, 9, 184-192.	15.6	81
33	Molecular mechanism of photosynthetic oxygen evolution. A theoretical approach. Journal of the American Chemical Society, 1992, 114, 4374-4382.	6.6	76
34	Bicarbonate Accelerates Assembly of the Inorganic Core of the Water-Oxidizing Complex in Manganese-Depleted Photosystem II:â€‰ A Proposed Biogeochemical Role for Atmospheric Carbon Dioxide in Oxygenic Photosynthesis. Biochemistry, 2000, 39, 6060-6065.	1.2	74
35	Tuning the Electrocatalytic Water Oxidation Properties of AB₂O₄ Spinel Nanocrystals: A (Li, Mg, Zn) and B (Mn, Co) Site Variants of LiMn₂O₄. ACS Catalysis, 2015, 5, 3403-3410.	5.5	74
36	What Are the Oxidation States of Manganese Required To Catalyze Photosynthetic Water Oxidation?. Biophysical Journal, 2012, 103, 313-322.	0.2	72

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37	Protein Coordination to Manganese Determines the High Catalytic Rate of Dimanganese Catalases. Comparison to Functional Catalase Mimics. Biochemistry, 1994, 33, 15433-15436.	1.2	70
38	Phenotypic diversity of hydrogen production in chlorophycean algae reflects distinct anaerobic metabolisms. Journal of Biotechnology, 2009, 142, 21-30.	1.9	70
39	What Determines Catalyst Functionality in Molecular Water Oxidation? Dependence on Ligands and Metal Nuclearity in Cobalt Clusters. Inorganic Chemistry, 2014, 53, 2113-2121.	1.9	70
40	Mn2+/Mn3+ and Mn3+/Mn4+ mixed valence binuclear manganese complexes of biological interest. Journal of the American Chemical Society, 1987, 109, 7202-7203.	6.6	66
41	Water Oxidation by the [Co4O4(OAc)4(py)4]+ Cubium is Initiated by OHâ€“ Addition. Journal of the American Chemical Society, 2015, 137, 15460-15468.	6.6	64
42	Models for the photosynthetic water oxidizing enzyme. 1. A binuclear manganese(III)-Î²-cyclodextrin complex. Journal of the American Chemical Society, 1983, 105, 124-125.	6.6	63
43	Conversion of Core Oxos to Water Molecules by 4e-/4H+Reductive Dehydration of the Mn4O26+Core in the Manganeseâˆ’Oxo Cubane Complex Mn4O4(Ph2PO2)6:Â A Partial Model for Photosynthetic Water Binding and Activation. Inorganic Chemistry, 2000, 39, 1021-1027.	1.9	63
44	l-Arginine Binding to Liver Arginase Requires Proton Transfer to Gateway Residue His141 and Coordination of the Guanidinium Group to the Dimanganese(II,II) Centerâ€. Biochemistry, 1998, 37, 8539-8550.	1.2	62
45	Tuning the Photoinduced O2-Evolving Reactivity of Mn4O47+, Mn4O46+, and Mn4O3(OH)6+ Manganeseâˆ’Oxo Cubane Complexes. Inorganic Chemistry, 2006, 45, 189-195.	1.9	60
46	Consequences of structural and biophysical studies for the molecular mechanism of photosynthetic oxygen evolution: functional roles for calcium and bicarbonate. Physical Chemistry Chemical Physics, 2004, 6, 4793.	1.3	56
47	Oxidation potentials and electron donation to photosystem II of manganese complexes containing bicarbonate and carboxylate ligands. Physical Chemistry Chemical Physics, 2004, 6, 4905.	1.3	54
48	Calcium Induces Binding and Formation of a Spin-Coupled Dimanganese(II,II) Center in the Apo-Water Oxidation Complex of Photosystem II as Precursor to the Functional Tetra-Mn/Ca Clusterâ€. Biochemistry, 1997, 36, 11342-11350.	1.2	53
49	Trapping an Elusive Intermediate in Manganeseâˆ’Oxo Cubane Chemistry. Inorganic Chemistry, 2004, 43, 5795-5797.	1.9	52
50	Transition from Hydrogen Atom to Hydride Abstraction by Mn4O4(O2PPh2)6versus [Mn4O4(O2PPh2)6]+:Â Oâˆ’H Bond Dissociation Energies and the Formation of Mn4O3(OH)(O2PPh2)6. Inorganic Chemistry, 2003, 42, 2849-2858.	1.9	51
51	Spectroscopic Evidence for Ca2+Involvement in the Assembly of the Mn4Ca Cluster in the Photosynthetic Water-Oxidizing Complexâ€. Biochemistry, 2006, 45, 12876-12889.	1.2	50
52	Evolutionary significance of an algal gene encoding an [FeFe]-hydrogenase with F-domain homology and hydrogenase activity in Chlorella variabilis NC64A. Planta, 2011, 234, 829-843.	1.6	50
53	Metabolic and photosynthetic consequences of blocking starch biosynthesis in the green alga <i><scp>C</scp>hlamydomonas reinhardtii sta6</i> mutant. Plant Journal, 2015, 81, 947-960.	2.8	49
54	Electrochemical investigation of Mn4O4-cubane water-oxidizing clusters. Physical Chemistry Chemical Physics, 2009, 11, 6441.	1.3	48

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55	Kinetics of proton-coupled electron-transfer reactions to the manganese-oxo "cubane" complexes containing the Mn4OFormula and Mn4OFormula core types. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 3707-3712.	3.3	46
56	Reprogramming the glycolytic pathway for increased hydrogen production in cyanobacteria: metabolic engineering of NAD+-dependent GAPDH. Energy and Environmental Science, 2013, 6, 3722.	15.6	44
57	Remarkable Affinity and Selectivity for Cs+ and Uranyl (UO22+) Binding to the Manganese Site of the Apo-Water Oxidation Complex of Photosystem II. Biochemistry, 1999, 38, 7200-7209.	1.2	43
58	Photosystem II-cyclic electron flow powers exceptional photoprotection and record growth in the microalga Chlorella ohadii. Biochimica Et Biophysica Acta - Bioenergetics, 2017, 1858, 873-883.	0.5	40
59	Photosynthetic Oxygen Evolution Is Not Reversed at High Oxygen Pressures: Mechanistic Consequences for the Water-Oxidizing Complex. Biochemistry, 2009, 48, 1381-1389.	1.2	39
60	Engineered Photosystem II Reaction Centers Optimize Photochemistry versus Photoprotection at Different Solar Intensities. Journal of the American Chemical Society, 2014, 136, 4048-4055.	6.6	36
61	Mutagenesis of CP43-arginine-357 to serine reveals new evidence for (bi)carbonate functioning in the water oxidizing complex of Photosystem II. Photochemical and Photobiological Sciences, 2005, 4, 991.	1.6	35
62	Dynamics of Lipid Biosynthesis and Redistribution in the Marine Diatom Phaeodactylum tricornutum Under Nitrate Deprivation. Bioenergy Research, 2012, 5, 876-885.	2.2	31
63	A Tandem Waterâ€Splitting Device Based on a Bioâ€inspired Manganese Catalyst. ChemSusChem, 2010, 3, 1146-1150.	3.6	30
64	Surface and Structural Investigation of a MnO_{<i>x</i>} Birnessiteâ€Type Water Oxidation Catalyst Formed under Photocatalytic Conditions. Chemistry - A European Journal, 2015, 21, 14218-14228.	1.7	29
65	Evolutionary Origins of the Photosynthetic Water Oxidation Cluster: Bicarbonate Permits Mn²⁺ Photoâ€oxidation by Anoxygenic Bacterial Reaction Centers. ChemBioChem, 2013, 14, 1725-1731.	1.3	25
66	Thermodynamically accurate modeling of the catalytic cycle of photosynthetic oxygen evolution: A mathematical solution to asymmetric Markov chains. Biochimica Et Biophysica Acta - Bioenergetics, 2013, 1827, 861-868.	0.5	25
67	Identification and quantification of waterâ€soluble metabolites by cryoprobeâ€assisted nuclear magnetic resonance spectroscopy applied to microbial fermentation. Magnetic Resonance in Chemistry, 2009, 47, S138-46.	1.1	24
68	Contribution of a Sodium Ion Gradient to Energy Conservation during Fermentation in the Cyanobacterium Arthrospira (Spirulina) maxima CS-328. Applied and Environmental Microbiology, 2011, 77, 7185-7194.	1.4	22
69	Towards Hydrogen Energy: Progress on Catalysts for Water Splitting. Australian Journal of Chemistry, 2012, 65, 577.	0.5	22
70	Resolving Ambiguous Protonation and Oxidation States in the Oxygen Evolving Complex of Photosystem II. Journal of Physical Chemistry B, 2018, 122, 8654-8664.	1.2	22
71	In vivo bicarbonate requirement for water oxidation by Photosystem II in the hypercarbonate-requiring cyanobacterium Arthrospira maxima. Journal of Inorganic Biochemistry, 2007, 101, 1865-1874.	1.5	21
72	The Oxygen quantum yield in diverse algae and cyanobacteria is controlled by partitioning of flux between linear and cyclic electron flow within photosystem II. Biochimica Et Biophysica Acta - Bioenergetics, 2016, 1857, 1380-1391.	0.5	19

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73	Bicarbonate Coordinates to Mn3+ during Photo-Assembly of the Catalytic Mn4Ca Core of Photosynthetic Water Oxidation: EPR Characterization. Applied Magnetic Resonance, 2010, 37, 137-150.	0.6	16
74	The strontium inorganic mutant of the water oxidizing center (CaMn4O5) of PSII improves WOC efficiency but slows electron flux through the terminal acceptors. Biochimica Et Biophysica Acta - Bioenergetics, 2016, 1857, 1550-1560.	0.5	16
75	â€˜Birth defectsâ€™ of photosystem II make it highly susceptible to photodamage during chloroplast biogenesis. Physiologia Plantarum, 2019, 166, 165-180.	2.6	15
76	Symbiosis extended: exchange of photosynthetic O2 and fungal-respired CO2 mutually power metabolism of lichen symbionts. Photosynthesis Research, 2020, 143, 287-299.	1.6	14
77	Inactivation of nitrate reductase alters metabolic branching of carbohydrate fermentation in the cyanobacterium Synechococcus sp. strain PCC 7002. Biotechnology and Bioengineering, 2016, 113, 979-988.	1.7	13
78	Self-Assembled Monolayer of Organic Iodine on a Au Surface for Attachment of Redox-Active Metal Clusters. Langmuir, 2007, 23, 8257-8263.	1.6	12
79	Rewiring of Cyanobacterial Metabolism for Hydrogen Production: Synthetic Biology Approaches and Challenges. Advances in Experimental Medicine and Biology, 2018, 1080, 171-213.	0.8	12
80	Prospecting for biohydrogen fuel. Industrial Biotechnology, 2006, 2, 133-137.	0.5	10
81	Reconciling Structural and Spectroscopic Fingerprints of the Oxygen-Evolving Complex of Photosystem II: A Computational Study of the S₂ State. Journal of Physical Chemistry B, 2018, 122, 11868-11882.	1.2	10
82	Why Did Nature Choose Manganese over Cobalt to Make Oxygen Photosynthetically on the Earth?. Journal of Physical Chemistry B, 2022, 126, 3257-3268.	1.2	7
83	A new mechanism-based inhibitor of photosynthetic water oxidation: acetone hydrazone. 2. Kinetic probes. Biochemistry, 1990, 29, 7767-7773.	1.2	6
84	Entropy and enthalpy contributions to the kinetics of proton coupled electron transfer to the Mn₄O₄(O₂PPh₂)₆ cubane. Physical Chemistry Chemical Physics, 2014, 16, 11843-11847.	1.3	6
85	Realtime kinetics of the light driven steps of photosynthetic water oxidation in living organisms by â€œstroboscopicâ€• fluorometry. Biochimica Et Biophysica Acta - Bioenergetics, 2020, 1861, 148212.	0.5	6
86	EPR EVIDENCE FOR THE INVOLVEMENT OF A DISCRETE MANGANESE CLUSTER IN O2 EVOLUTION1,1Supported by a Searle Scholars Award and grants by the USDA CRGO and the SERI division of the DOE, grant no. DE-FG02â€"80CS84003 A003.22This article is dedicated to the memory of Professor Allen Scattergood.. , 1983, , 145-158.		6
87	THE ORGANIZATION AND FUNCTION OF MANGANESE IN THE WATER-OXIDIZING COMPLEX OF PHOTOSYNTHESIS11Supported by the Department of Energy Soleras Program Grant No. 84CH10199 and the National Science Foundation Grant No. CHE82-17920.. , 1986, , 275-309.		6
88	Bridging the gap between Kok-type and kinetic models of photosynthetic electron transport within Photosystem II. Photosynthesis Research, 2022, 151, 83-102.	1.6	5
89	Natural isoforms of the Photosystem II D1 subunit differ in photoassembly efficiency of the water-oxidizing complex. Photosynthesis Research, 2016, 128, 141-150.	1.6	4
90	A new mechanism-based inhibitor of photosynthetic water oxidation: acetone hydrazone. 1. Equilibrium reactions. Biochemistry, 1990, 29, 7759-7767.	1.2	3

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91	Desiccation tolerant lichens facilitate in vivo H/D isotope effect measurements in oxygenic photosynthesis. Biochimica Et Biophysica Acta - Bioenergetics, 2018, 1859, 1039-1044.	0.5	3
92	Synthetic Catalysts for Non-biological Water Oxidation: Comparison to the photosynthetic water oxidation complex. , 1999, , 330-363.		1
93	A New Class of Potential Mechanism-Based Suicide Inhibitors of Photosynthetic Activity. , 1989, , 247-250.		0