Juan C Fontecilla-Camps

List of Publications by Year
in descending order

97 papers	12,033 citations	50276 46 h-index	39675 94 g-index
108 all docs	108 docs citations	108 times ranked	5774 citing authors

#	Article	IF	Citations
1	Crystal structure of the nickelâ€"iron hydrogenase from Desulfovibrio gigas. Nature, 1995, 373, 580-587.	27.8	1,532
2	Desulfovibrio desulfuricans iron hydrogenase: the structure shows unusual coordination to an active site Fe binuclear center. Structure, 1999, 7, 13-23.	3.3	1,320
3	Structure/Function Relationships of [NiFe]- and [FeFe]-Hydrogenases. Chemical Reviews, 2007, 107, 4273-4303.	47.7	1,234
4	Crystallographic and FTIR Spectroscopic Evidence of Changes in Fe Coordination Upon Reduction of the Active Site of the Fe-Only Hydrogenase fromDesulfovibriodesulfuricans. Journal of the American Chemical Society, 2001, 123, 1596-1601.	13.7	761
5	The crystal structure of a reduced [NiFeSe] hydrogenase provides an image of the activated catalytic center. Structure, 1999, 7, 557-566.	3.3	448
6	Ni-Zn-[Fe4-S4] and Ni-Ni-[Fe4-S4] clusters in closed and open Î± subunits of acetyl-CoA synthase/carbon monoxide dehydrogenase. Nature Structural and Molecular Biology, 2003, 10, 271-279.	8.2	418
7	Visible Light-Driven H₂ Production by Hydrogenases Attached to Dye-Sensitized TiO₂ Nanoparticles. Journal of the American Chemical Society, 2009, 131, 18457-18466.	13.7	407
8	A novel FeS cluster in Fe-only hydrogenases. Trends in Biochemical Sciences, 2000, 25, 138-143.	7.5	401
9	Gas access to the active site of Ni-Fe hydrogenases probed by X-ray crystallography and molecular dynamics. Nature Structural Biology, 1997, 4, 523-526.	9.7	325
10	Structural differences between the ready and unready oxidized states of [NiFe] hydrogenases. Journal of Biological Inorganic Chemistry, 2005, 10, 239-249.	2.6	291
11	Structureâ€"function relationships of anaerobic gas-processing metalloenzymes. Nature, 2009, 460, 814-822.	27.8	231
12	Electrochemical Definitions of O2 Sensitivity and Oxidative Inactivation in Hydrogenases. Journal of the American Chemical Society, 2005, 127, 18179-18189.	13.7	208
13	[3Fe-4S] to [4Fe-4S] cluster conversion in Desulfovibrio fructosovorans [NiFe] hydrogenase by site-directed mutagenesis. Proceedings of the National Academy of Sciences of the United States of America, 1998, 95, 11625-11630.	7.1	203
14	X-ray crystallographic and computational studies of the O ₂ -tolerant [NiFe]-hydrogenase 1 from <i>Escherichia coli</i>. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 5305-5310.	7.1	194
15	Crystal structures of the key anaerobic enzyme pyruvate:ferredoxin oxidoreductase, free and in complex with pyruvate. Nature Structural Biology, 1999, 6, 182-190.	9.7	175
16	The Difference a Se Makes? Oxygen-Tolerant Hydrogen Production by the [NiFeSe]-Hydrogenase from <i>Desulfomicrobium baculatum</i>. Journal of the American Chemical Society, 2008, 130, 13410-13416.	13.7	172
17	Electrochemical Kinetic Investigations of the Reactions of [FeFe]-Hydrogenases with Carbon Monoxide and Oxygen: Comparing the Importance of Gas Tunnels and Active-Site Electronic/Redox Effects. Journal of the American Chemical Society, 2009, 131, 14979-14989.	13.7	167
18	Catalytic electrochemistry of a [NiFeSe]-hydrogenase on TiO2 and demonstration of its suitability for visible-light driven H₂production. Chemical Communications, 2009, , 550-552.	4.1	160

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19	Experimental approaches to kinetics of gas diffusion in hydrogenase. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 11188-11193.	7.1	150
20	Crystal Structure of the Free Radical Intermediate of Pyruvate:Ferredoxin Oxidoreductase. Science, 2001, 294, 2559-2563.	12.6	143
21	High-resolution crystallographic analysis of Desulfovibrio fructosovorans 6NiFe9 hydrogenase. International Journal of Hydrogen Energy, 2002, 27, 1449-1461.	7.1	140
22	The role of the maturase HydG in [FeFe]â€hydrogenase active site synthesis and assembly. FEBS Letters, 2009, 583, 506-511.	2.8	134
23	The active site and catalytic mechanism of NiFe hydrogenases. Dalton Transactions, 2003, , 4030-4038.	3.3	123
24	(IscSâ€IscU)₂ Complex Structures Provide Insights into Fe₂S₂ Biogenesis and Transfer. Angewandte Chemie - International Edition, 2012, 51, 5439-5442.	13.8	123
25	X-ray Structure of the [FeFe]-Hydrogenase Maturase HydE from Thermotoga maritima. Journal of Biological Chemistry, 2008, 283, 18861-18872.	3.4	119
26	Structureâ€“function relationships of nickelâ€“iron sites in hydrogenase and a comparison with the active sites of other nickelâ€“iron enzymes. Coordination Chemistry Reviews, 2005, 249, 1609-1619.	18.8	113
27	Crystal Structure of the O 2 -Tolerant Membrane-Bound Hydrogenase 1 from Escherichia coli in Complex with Its Cognate Cytochrome b. Structure, 2013, 21, 184-190.	3.3	93
28	Principles of Sustained Enzymatic Hydrogen Oxidation in the Presence of Oxygen â€“ The Crucial Influence of High Potential Feâ€“S Clusters in the Electron Relay of [NiFe]-Hydrogenases. Journal of the American Chemical Society, 2013, 135, 2694-2707.	13.7	91
29	Unexpected electron transfer mechanism upon AdoMet cleavage in radical SAM proteins. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 14867-14871.	7.1	84
30	Crystal Structure of Tryptophan Lyase (NosL): Evidence for Radical Formation at the Amino Group of Tryptophan. Angewandte Chemie - International Edition, 2014, 53, 11840-11844.	13.8	81
31	Electrochemical Investigations of the Interconversions between Catalytic and Inhibited States of the [FeFe]-Hydrogenase fromDesulfovibriodesulfuricans. Journal of the American Chemical Society, 2006, 128, 16808-16815.	13.7	78
32	Carbon Monoxide Dehydrogenase Reaction Mechanism: A Likely Case of Abnormal CO₂ Insertion to a Niâˆ’H^{âˆ’} Bond. Inorganic Chemistry, 2011, 50, 1868-1878.	4.0	75
33	Crystallographic and Spectroscopic Evidence for High Affinity Binding of FeEDTA(H2O)-to the Periplasmic Nickel Transporter NikA. Journal of the American Chemical Society, 2005, 127, 10075-10082.	13.7	74
34	Structure-Function Relationships in [FeFe]-Hydrogenase Active Site Maturation. Journal of Biological Chemistry, 2012, 287, 13532-13540.	3.4	72
35	Carbonâ€“sulfur bond-forming reaction catalysed by the radical SAM enzyme HydE. Nature Chemistry, 2016, 8, 491-500.	13.6	72
36	The quest for a functional substrate access tunnel in FeFe hydrogenase. Faraday Discussions, 2011, 148, 385-407.	3.2	70

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37	Density Functional Calculations for Modeling the Active Site of Nickelâˆ’Iron Hydrogenases. 2. Predictions for the Unready and Ready States and the Corresponding Activation Processes. Inorganic Chemistry, 2002, 41, 4424-4434.	4.0	68
38	Structural Characterization of a Putative Endogenous Metal Chelator in the Periplasmic Nickel Transporter NikA. Biochemistry, 2008, 47, 9937-9943.	2.5	67
39	X-ray snapshots of possible intermediates in the time course of synthesis and degradation of protein-bound Fe ₄ S ₄ clusters. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 7188-7192.	7.1	62
40	Crystal structures of the NO sensor NsrR reveal how its iron-sulfur cluster modulates DNA binding. Nature Communications, 2017, 8, 15052.	12.8	59
41	A QM/MM study of proton transport pathways in a [NiFe] hydrogenase. Proteins: Structure, Function and Bioinformatics, 2008, 73, 195-203.	2.6	58
42	Nickelâ€“Ironâ€“Sulfur Active Sites: Hydrogenase and Co Dehydrogenase. Advances in Inorganic Chemistry, 1999, 47, 283-333.	1.0	55
43	Fine-tuning of a radical-based reaction by radical <i>S</i> -adenosyl-L-methionine tryptophan lyase. Science, 2016, 351, 1320-1323.	12.6	53
44	Crystallographic studies of [NiFe]-hydrogenase mutants: towards consensus structures for the elusive unready oxidized states. Journal of Biological Inorganic Chemistry, 2015, 20, 11-22.	2.6	52
45	A glycyl free radical as the precursor in the synthesis of carbon monoxide and cyanide by the [FeFe]â€hydrogenase maturase HydG. FEBS Letters, 2010, 584, 4197-4202.	2.8	51
46	Structural bases for the catalytic mechanism of Ni-containing carbon monoxide dehydrogenases. Dalton Transactions, 2005, , 3443.	3.3	50
47	CO and CN ^{âˆ’} syntheses by [FeFe]-hydrogenase maturase HydG are catalytically differentiated events. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 104-109.	7.1	47
48	Tryptophan Lyase (NosL): Mechanistic Insights from Substrate Analogues and Mutagenesis. Biochemistry, 2015, 54, 4767-4769.	2.5	46
49	Crystallographic evidence for a CO/CO2 tunnel gating mechanism in the bifunctional carbon monoxide dehydrogenase/acetyl coenzyme A synthase from Moorella thermoacetica. Journal of Biological Inorganic Chemistry, 2004, 9, 525-532.	2.6	44
50	The binding mode of Ni-(L-His)2 in NikA revealed by X-ray crystallography. Journal of Inorganic Biochemistry, 2013, 121, 16-18.	3.5	41
51	Crystal Structure of HydG from <i>Carboxydothermus hydrogenoformans</i>: A Trifunctional [FeFe]â€Hydrogenase Maturase. ChemBioChem, 2015, 16, 397-402.	2.6	41
52	Flexibility of Thiamine Diphosphate Revealed by Kinetic Crystallographic Studies of the Reaction of Pyruvate-Ferredoxin Oxidoreductase with Pyruvate. Structure, 2006, 14, 217-224.	3.3	40
53	Structural Model of the Fe-Hydrogenase/Cytochromec 553 Complex Combining Transverse Relaxation-optimized Spectroscopy Experiments and Soft Docking Calculations. Journal of Biological Chemistry, 2000, 275, 23204-23210.	3.4	39
54	Carboxy-Terminal Processing of the Large Subunit of [Fe] Hydrogenase from Desulfovibrio desulfuricans ATCC 7757. Journal of Bacteriology, 1999, 181, 2947-2952.	2.2	39

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55	The crystal structure of the global anaerobic transcriptional regulator FNR explains its extremely fine-tuned monomer-dimer equilibrium. Science Advances, 2015, 1, e1501086.	10.3	37
56	Artificial metalloenzymes derived from bovine Î²-lactoglobulin for the asymmetric transfer hydrogenation of an aryl ketone â€“ synthesis, characterization and catalytic activity. Dalton Transactions, 2014, 43, 5482-5489.	3.3	32
57	Function of the tunnel in acetylcoenzyme A synthase/carbon monoxide dehydrogenase. Journal of Biological Inorganic Chemistry, 2006, 11, 371-378.	2.6	31
58	The Structural Plasticity of the Proximal [4Fe3S] Cluster is Responsible for the O₂ Tolerance of Membraneâ€Bound [NiFe] Hydrogenases. Angewandte Chemie - International Edition, 2013, 52, 2002-2006.	13.8	31
59	Formaldehydeâ€"A Rapid and Reversible Inhibitor of Hydrogen Production by [FeFe]-Hydrogenases. Journal of the American Chemical Society, 2011, 133, 1282-1285.	13.7	30
60	Geochemical Continuity and Catalyst/Cofactor Replacement in the Emergence and Evolution of Life. Angewandte Chemie - International Edition, 2019, 58, 42-48.	13.8	30
61	The structure of the periplasmic nickel-binding protein NikA provides insights for artificial metalloenzyme design. Journal of Biological Inorganic Chemistry, 2012, 17, 817-829.	2.6	27
62	Catalytic Nickelâ€“Ironâ€“Sulfur Clusters: From Minerals to Enzymes. , 0, , 57-82.		24
63	Maturation of [FeFe]-hydrogenases: Structures and mechanisms. International Journal of Hydrogen Energy, 2010, 35, 10750-10760.	7.1	24
64	Further Characterization of the [FeFe]â€Hydrogenase Maturase HydG. European Journal of Inorganic Chemistry, 2011, 2011, 1121-1127.	2.0	23
65	Structural Basis for Enantioselectivity in the Transfer Hydrogenation of a Ketone Catalyzed by an Artificial Metalloenzyme. European Journal of Inorganic Chemistry, 2013, 2013, 3596-3600.	2.0	23
66	The Crystal Structure of Fe₄S₄ Quinolinate Synthase Unravels an Enzymatic Dehydration Mechanism That Uses Tyrosine and a Hydrolase-Type Triad. Journal of the American Chemical Society, 2014, 136, 5253-5256.	13.7	23
67	Histidine 416 of the periplasmic binding protein NikA is essential for nickel uptake in <i>Escherichia coli</i>. FEBS Letters, 2011, 585, 711-715.	2.8	22
68	[NiFe]-hydrogenases revisited: nickelâ€“carboxamido bond formation in a variant with accrued O₂-tolerance and a tentative re-interpretation of Ni-SI states. Metallomics, 2015, 7, 710-718.	2.4	19
69	Crystal Structure of the Transcription Regulator RsrR Reveals a [2Feâ€“2S] Cluster Coordinated by Cys, Glu, and His Residues. Journal of the American Chemical Society, 2019, 141, 2367-2375.	13.7	18
70	Novel Domain Arrangement in the Crystal Structure of a Truncated Acetyl-CoA Synthase from <i>Moorella thermoacetica</i>[,]. Biochemistry, 2009, 48, 7916-7926.	2.5	15
71	Crystal structure and functional studies of an unusual<scp>l</scp>-cysteine desulfurase from Archaeoglobus fulgidus. Dalton Transactions, 2013, 42, 3092-3099.	3.3	15
72	Crystal Structures of Quinolinate Synthase in Complex with a Substrate Analogue, the Condensation Intermediate, and Substrate-Derived Product. Journal of the American Chemical Society, 2016, 138, 11802-11809.	13.7	14

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73	Crystallization and Preliminary X-ray Diffraction Study of the Nickel-binding Protein NikA of Escherichia coli. Journal of Molecular Biology, 1994, 243, 353-355.	4.2	13
74	Primordial bioenergy sources: The two facets of adenosine triphosphate. Journal of Inorganic Biochemistry, 2021, 216, 111347.	3.5	12
75	The Stereochemical Basis of the Genetic Code and the (Mostly) Autotrophic Origin of Life. Life, 2014, 4, 1013-1025.	2.4	11
76	IscS from Archaeoglobus fulgidus has no desulfurase activity but may provide a cysteine ligand for [Fe 2 S 2] cluster assembly. Biochimica Et Biophysica Acta - Molecular Cell Research, 2015, 1853, 1457-1463.	4.1	11
77	Electron and Proton Transfers Modulate DNA Binding by the Transcription Regulator RsrR. Journal of the American Chemical Society, 2020, 142, 5104-5116.	13.7	11
78	Quinolinate Synthase: An Example of the Roles of the Second and Outer Coordination Spheres in Enzyme Catalysis. Chemical Reviews, 2022, , .	47.7	10
79	Electronic states of the O ₂ -tolerant [NiFe] hydrogenase proximal cluster. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E2538.	7.1	9
80	Crystallographic Trapping of Reaction Intermediates in Quinolinic Acid Synthesis by NadA. ACS Chemical Biology, 2018, 13, 1209-1217.	3.4	9
81	Combination of methods used in the structure solution of pyruvate:ferredoxin oxidoreductase from two crystal forms. Acta Crystallographica Section D: Biological Crystallography, 1999, 55, 1546-1554.	2.5	6
82	X-ray structural, functional and computational studies of the O2-sensitive E. coli hydrogenase-1 C19G variant reveal an unusual [4Feâ€“4S] cluster. Chemical Communications, 2018, 54, 7175-7178.	4.1	5
83	Geochemische KontinuitÃ¤t und Katalysator/Cofaktorâ€Austausch fÃ¼r Ursprung und Evolution des Lebens. Angewandte Chemie, 2019, 131, 42-48.	2.0	5
84	Nickel and the origin and early evolution of life. Metallomics, 2022, 14, .	2.4	5
85	The Complex Roles of Adenosine Triphosphate in Bioenergetics. ChemBioChem, 2022, 23, e202200064.	2.6	5
86	The Enamine Intermediate May Not Be Universal to Thiamine Catalysis. Angewandte Chemie - International Edition, 2007, 46, 9019-9022.	13.8	4
87	Design of specific inhibitors of quinolinate synthase based on [4Feâ€“4S] cluster coordination. Chemical Communications, 2019, 55, 3725-3728.	4.1	4
88	Structural basis for the catalytic activities of the multifunctional enzyme quinolinate synthase. Coordination Chemistry Reviews, 2020, 417, 213370.	18.8	4
89	10. Iron-sulfur clusters and molecular oxygen: function, adaptation, degradation, and repair. , 2014, , 239-266.		3
90	12. Iron-sulfur clusters and molecular oxygen: function, adaptation, degradation, and repair. , 2017, , 359-386.		2

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91	Structure and Function of [NiFe]-Hydrogenases. Metal Ions in Life Sciences, 2009, 6, 151-78.	2.8	2
92	Crystallographic evidence for unexpected selective tyrosine hydroxylations in an aerated achiral Ruâ€"papain conjugate. Metallomics, 2018, 10, 1452-1459.	2.4	1
93	Transient Formation of a Second Active Site Cavity during Quinolinic Acid Synthesis by NadA. ACS Chemical Biology, 2021, 16, 2423-2433.	3.4	1
94	The Evolutionary Relationship Between Complex I and [NiFe]-Hydrogenase. , 2012, , 109-121.		1
95	The Enamine Intermediate May Not Be Universal to Thiamine Catalysis. Angewandte Chemie - International Edition, 2008, 47, 628-628.	13.8	0
96	Structural Foundations for O2 Sensitivity and O2 Tolerance in [NiFe]-Hydrogenases. Advances in Photosynthesis and Respiration, 2014, , 23-41.	1.0	0
97	5 Structure and Function of [NiFe]-Hydrogenases. , 2015, , 151-178.		0