Antonio L De Lacey

List of Publications by Citations

106 papers	6,417 citations	41 h-index	78 g-index
109 ext. papers	6,874 ext. citations	7.9 avg, IF	5.41 L-index

#	Paper	IF	Citations
106	Crystallographic and FTIR spectroscopic evidence of changes in Fe coordination upon reduction of the active site of the Fe-only hydrogenase from Desulfovibrio desulfuricans. *Journal of the American Chemical Society*, **2001**, 123, 1596-601	16.4	712
105	Structure of the [NiFe] Hydrogenase Active Site: Evidence for Biologically Uncommon Fe Ligands?. *Journal of the American Chemical Society*, **1996**, 118, 12989-12996	16.4	579
104	Activation and inactivation of hydrogenase function and the catalytic cycle: spectroelectrochemical studies. *Chemical Reviews*, **2007**, 107, 4304-30	68.1	409
103	Infrared-Spectroelectrochemical Characterization of the [NiFe] Hydrogenase of Desulfovibrio gigas?. *Journal of the American Chemical Society*, **1997**, 119, 7181-7189	16.4	249
102	The active site of the [FeFe]-hydrogenase from Desulfovibrio desulfuricans. II. Redox properties, light sensitivity and CO-ligand exchange as observed by infrared spectroscopy. *Journal of Biological Inorganic Chemistry*, **2006**, 11, 102-18	3.7	195
101	FTIR Characterization of the Active Site of the Fe-hydrogenase from Desulfovibrio desulfuricans. *Journal of the American Chemical Society*, **2000**, 122, 11232-11233	16.4	171
100	Hydrogenase-coated carbon nanotubes for efficient H2 oxidation. *Nano Letters*, **2007**, 7, 1603-8	11.5	158
99	Bioelectrochemical Haber-Bosch Process: An Ammonia-Producing H /N Fuel Cell. *Angewandte Chemie - International Edition*, **2017**, 56, 2680-2683	16.4	155
98	Gold nanoparticles as electronic bridges for laccase-based biocathodes. *Journal of the American Chemical Society*, **2012**, 134, 17212-20	16.4	154
97	Oriented immobilization of Desulfovibrio gigas hydrogenase onto carbon electrodes by covalent bonds for nonmediated oxidation of H2. *Journal of the American Chemical Society*, **2005**, 127, 16008-9	16.4	140
96	Laccase electrode for direct electrocatalytic reduction of O2 to H2O with high-operational stability and resistance to chloride inhibition. *Biosensors and Bioelectronics*, **2008**, 24, 531-7	11.8	139
95	A glutamate is the essential proton transfer gate during the catalytic cycle of the [NiFe] hydrogenase. *Journal of Biological Chemistry*, **2004**, 279, 10508-13	5.4	112
94	A membrane-, mediator-, cofactor-less glucose/oxygen biofuel cell. *Physical Chemistry Chemical Physics*, **2008**, 10, 6093-6	3.6	109
93	The three-dimensional structure of [NiFeSe] hydrogenase from Desulfovibrio vulgaris Hildenborough: a hydrogenase without a bridging ligand in the active site in its oxidised, "as-isolated" state. *Journal of Molecular Biology*, **2010**, 396, 893-907	6.5	103
92	The activation of the [NiFe]-hydrogenase from Allochromatium vinosum. An infrared spectro-electrochemical study. *Journal of Biological Inorganic Chemistry*, **2004**, 9, 743-52	3.7	101
91	Introduction of methionines in the gas channel makes [NiFe] hydrogenase aero-tolerant. *Journal of the American Chemical Society*, **2009**, 131, 10156-64	16.4	98
90	Electrochemical growth of Acidithiobacillus ferrooxidans on a graphite electrode for obtaining a biocathode for direct electrocatalytic reduction of oxygen. *Biosensors and Bioelectronics*, **2010**, 26, 877-80	11.8	94

89	The H2 sensor of Ralstonia eutropha. Biochemical characteristics, spectroscopic properties, and its interaction with a histidine protein kinase. *Journal of Biological Chemistry*, **2001**, 276, 15592-7	5.4	92
88	Changing the ligation of the distal [4Fe4S] cluster in NiFe hydrogenase impairs inter- and intramolecular electron transfers. *Journal of the American Chemical Society*, **2006**, 128, 5209-18	16.4	91
87	Understanding and tuning the catalytic bias of hydrogenase. *Journal of the American Chemical Society*, **2012**, 134, 8368-71	16.4	89
86	Original design of an oxygen-tolerant [NiFe] hydrogenase: major effect of a valine-to-cysteine mutation near the active site. *Journal of the American Chemical Society*, **2011**, 133, 986-97	16.4	84
85	High Redox Potential Cathode Based on Laccase Covalently Attached to Gold Electrode. *Journal of Physical Chemistry C*, **2011**, 115, 13420-13428	3.8	82
84	Density functional study of the catalytic cycle of nickel-iron [NiFe] hydrogenases and the involvement of high-spin nickel(II). *Journal of Biological Inorganic Chemistry*, **2006**, 11, 286-306	3.7	81
83	Nickel□Iron□Selenium Hydrogenases □An Overview. *European Journal of Inorganic Chemistry*, **2011**, 2011, 948-962	2.3	78
82	IR spectroelectrochemical study of the binding of carbon monoxide to the active site of Desulfovibrio fructosovorans Ni-Fe hydrogenase. *Journal of Biological Inorganic Chemistry*, **2002**, 7, 318-26	3.7	74
81	Enhanced direct electron transfer between laccase and hierarchical carbon microfibers/carbon nanotubes composite electrodes. Comparison of three enzyme immobilization methods. *Electrochimica Acta*, **2012**, 82, 218-223	6.7	73
80	Blood tolerant laccase by directed evolution. *Chemistry and Biology*, **2013**, 20, 223-31		67
79	Oriented immobilization of a membrane-bound hydrogenase onto an electrode for direct electron transfer. *Langmuir*, **2011**, 27, 6449-57	4	66
78	O2-independent formation of the inactive states of NiFe hydrogenase. *Nature Chemical Biology*, **2013**, 9, 15-7	11.7	65
77	Preferential use of an anode as an electron acceptor by an acidophilic bacterium in the presence of oxygen. *Applied and Environmental Microbiology*, **2008**, 74, 4472-6	4.8	65
76	Native and mutant nickel□iron hydrogenases: Unravelling structure and function. *Coordination Chemistry Reviews*, **2005**, 249, 1596-1608	23.2	64
75	Density functional calculations for modeling the active site of nickel-iron hydrogenases. 2. Predictions for the unready and ready States and the corresponding activation processes. *Inorganic Chemistry*, **2002**, 41, 4424-34	5.1	61
74	Self-powered wireless carbohydrate/oxygen sensitive biodevice based on radio signal transmission. *PLoS ONE*, **2014**, 9, e109104	3.7	52
73	The direct role of selenocysteine in [NiFeSe] hydrogenase maturation and catalysis. *Nature Chemical Biology*, **2017**, 13, 544-550	11.7	51
72	Relation between anaerobic inactivation and oxygen tolerance in a large series of NiFe hydrogenase mutants. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 19916-21	11.5	50

71	Enzymatic Anodes for Hydrogen Fuel Cells based on Covalent Attachment of Ni-Fe Hydrogenases and Direct Electron Transfer to SAM-Modified Gold Electrodes. *Electroanalysis*, **2010**, 22, 776-783	3	50
70	Crystallographic studies of [NiFe]-hydrogenase mutants: towards consensus structures for the elusive unready oxidized states. *Journal of Biological Inorganic Chemistry*, **2015**, 20, 11-22	3.7	48
69	Bioelectrochemical studies of azurin and laccase confined in three-dimensional chips based on gold-modified nano-/microstructured silicon. *Biosensors and Bioelectronics*, **2010**, 25, 1001-7	11.8	46
68	Spectroscopic and kinetic characterization of active site mutants of Desulfovibrio fructosovoransNi-Fe hydrogenase. *Journal of Biological Inorganic Chemistry*, **2003**, 8, 129-34	3.7	45
67	Wiring of Photosystem I and Hydrogenase on an Electrode for Photoelectrochemical H2 Production by using Redox Polymers for Relatively Positive Onset Potential. *ChemElectroChem*, **2017**, 4, 90-95	4.3	44
66	Oxygen biosensor based on bilirubin oxidase immobilized on a nanostructured gold electrode. *Bioelectrochemistry*, **2013**, 94, 69-74	5.6	42
65	Functional analysis by site-directed mutagenesis of the NAD(+)-reducing hydrogenase from Ralstonia eutropha. *Journal of Bacteriology*, **2002**, 184, 6280-8	3.5	41
64	FTIR spectroelectrochemical study of the activation and inactivation processes of [NiFe] hydrogenases: effects of solvent isotope replacement and site-directed mutagenesis. *Journal of Biological Inorganic Chemistry*, **2004**, 9, 636-42	3.7	40
63	Bioelectrochemical oxidation of water. *Journal of the American Chemical Society*, **2014**, 136, 5892-5	16.4	38
62	An improved purification procedure for the soluble [NiFe]-hydrogenase of Ralstonia eutropha: new insights into its (in)stability and spectroscopic properties. *Journal of Biological Inorganic Chemistry*, **2006**, 11, 247-60	3.7	37
61	Structural foundations for the O2 resistance of Desulfomicrobium baculatum [NiFeSe]-hydrogenase. *Chemical Communications*, **2013**, 49, 7061-3	5.8	33
60	[NiFe] and [FeS] cofactors in the membrane-bound hydrogenase of Ralstonia eutropha investigated by X-ray absorption spectroscopy: insights into O(2)-tolerant H(2) cleavage. *Biochemistry*, **2011**, 50, 5858-69	3.2	33
59	Amperometric enzyme electrode for NADP+ based on a ferrodoxin-NADP+ reductase and viologen-modified glassy carbon electrode. *Journal of Electroanalytical Chemistry*, **1995**, 390, 69-76	4.1	32
58	In Situ Determination of Photobioproduction of H2 by In2S3-[NiFeSe] Hydrogenase from Desulfovibrio vulgaris Hildenborough Using Only Visible Light. *ACS Catalysis*, **2016**, 6, 5691-5698	13.1	31
57	Construction of multicomponent catalytic films based on avidin-biotin technology for the electroenzymatic oxidation of molecular hydrogen. *Biotechnology and Bioengineering*, **2000**, 68, 1-10	4.9	31
56	Electrochemical determination of berberine at a multi-walled carbon nanotubes-modified glassy carbon electrode. *Sensors and Actuators B: Chemical*, **2013**, 183, 96-101	8.5	30
55	Transparent, mediator- and membrane-free enzymatic fuel cell based on nanostructured chemically modified indium tin oxide electrodes. *Biosensors and Bioelectronics*, **2017**, 97, 46-52	11.8	29
54	Fabrication of high surface area graphene electrodes with high performance towards enzymatic oxygen reduction. *Electrochimica Acta*, **2016**, 191, 500-509	6.7	29

53	Combinatorial saturation mutagenesis of the Myceliophthora thermophila laccase T2 mutant: the connection between the C-terminal plug and the conserved (509)VSG(511) tripeptide. *Combinatorial Chemistry and High Throughput Screening*, **2008**, 11, 807-16	1.3	29
52	FTIR spectroelectrochemical characterization of the Ni-Fe-Se hydrogenase from Desulfovibrio vulgaris Hildenborough. *Journal of Biological Inorganic Chemistry*, **2008**, 13, 1315-20	3.7	29
51	H2 -Fueled ATP Synthesis on an Electrode: Mimicking Cellular Respiration. *Angewandte Chemie - International Edition*, **2016**, 55, 6216-20	16.4	28
50	Density functional calculations for modeling the oxidized states of the active site of nickel-iron hydrogenases. 1. Verification of the method with paramagnetic Ni and Co complexes. *Inorganic Chemistry*, **2002**, 41, 4417-23	5.1	25
49	Three-Dimensional Graphene Matrix-Supported and Thylakoid Membrane-Based High-Performance Bioelectrochemical Solar Cell. *ACS Applied Energy Materials*, **2018**, 1, 319-323	6.1	24
48	Orientation and Function of a Membrane-Bound Enzyme Monitored by Electrochemical Surface-Enhanced Infrared Absorption Spectroscopy. *Journal of Physical Chemistry Letters*, **2013**, 4, 2794-2798	6.4	24
47	Combined ATR-SEIRAS and EC-STM Study of the Immobilization of Laccase on Chemically Modified Au Electrodes. *Journal of Physical Chemistry C*, **2012**, 116, 16532-16540	3.8	23
46	Electroenzymatic CO2 Fixation Using Redox Polymer/Enzyme-Modified Gas Diffusion Electrodes. *ACS Energy Letters*, **2020**, 5, 321-327	20.1	23
45	Synthesis and Characterization of V-Doped In2S3 Thin Films on FTO Substrates. *Journal of Physical Chemistry C*, **2016**, 120, 28753-28761	3.8	23
44	A purple acidophilic di-ferric DNA ligase from Ferroplasma. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 8878-83	11.5	22
43	Characterization of the active site of catalytically inactive forms of [NiFe] hydrogenases by density functional theory. *Journal of Biological Inorganic Chemistry*, **2007**, 12, 751-60	3.7	22
42	Covalent binding of viologen to electrode surfaces coated with poly(acrylic acid) prepared by electropolymerization of acrylate ions. *Journal of Electroanalytical Chemistry*, **1993**, 358, 261-272	4.1	22
41	Enzymatic Electrosynthesis of Alkanes by Bioelectrocatalytic Decarbonylation of Fatty Aldehydes. *Angewandte Chemie - International Edition*, **2018**, 57, 2404-2408	16.4	21
40	Influence of the protein structure surrounding the active site on the catalytic activity of [NiFeSe] hydrogenases. *Journal of Biological Inorganic Chemistry*, **2013**, 18, 419-27	3.7	21
39	Interaction of the active site of the Ni-Fe-Se hydrogenase from Desulfovibrio vulgaris Hildenborough with carbon monoxide and oxygen inhibitors. *Journal of Biological Inorganic Chemistry*, **2010**, 15, 1285-92	3.7	21
38	Covalent binding of viologen to electrode surfaces coated with poly(acrylic acid) formed by electropolymerization of acrylate ions. *Journal of Electroanalytical Chemistry*, **1993**, 358, 247-259	4.1	21
37	Reconstitution of respiratory complex I on a biomimetic membrane supported on gold electrodes. *Langmuir*, **2014**, 30, 9007-15	4	20
36	Impact of alterations near the [NiFe] active site on the function of the H(2) sensor from Ralstonia eutropha. *FEBS Journal*, **2007**, 274, 74-85	5.7	20

35	A new mechanistic model for an O-protected electron-bifurcating hydrogenase, Hnd from Desulfovibrio fructosovorans. *Biochimica Et Biophysica Acta - Bioenergetics*, **2018**, 1859, 1302-1312	4.6	20
34	[NiFe]-hydrogenases revisited: nickel-carboxamido bond formation in a variant with accrued O2-tolerance and a tentative re-interpretation of Ni-SI states. *Metallomics*, **2015**, 7, 710-8	4.5	19
33	Laccase-modified gold nanorods for electrocatalytic reduction of oxygen. *Bioelectrochemistry*, **2016** , 107, 30-6	5.6	19
32	Direct electron transfer reactions between human ceruloplasmin and electrodes. *Bioelectrochemistry*, **2009**, 76, 34-41	5.6	19
31	Simple formal kinetics for the reversible uptake of molecular hydrogen by [Ni-Fe] hydrogenase from Desulfovibrio gigas. *FEBS Journal*, **2000**, 267, 6560-70		18
30	Induction of a proton gradient across a gold-supported biomimetic membrane by electroenzymatic H2 oxidation. *Angewandte Chemie - International Edition*, **2015**, 54, 2684-7	16.4	17
29	Electricity generation by microorganisms in the sediment-water interface of an extreme acidic microcosm. *International Microbiology*, **2011**, 14, 73-81	3	17
28	A threonine stabilizes the NiC and NiR catalytic intermediates of [NiFe]-hydrogenase. *Journal of Biological Chemistry*, **2015**, 290, 8550-8	5.4	16
27	Laccase-Catalyzed Bioelectrochemical Oxidation of Water Assisted with Visible Light. *ACS Catalysis*, **2017**, 7, 4881-4889	13.1	15
26	Sulfur-doped carbons prepared from eutectic mixtures containing hydroxymethylthiophene as metal-free oxygen reduction catalysts. *ChemSusChem*, **2014**, 7, 3347-55	8.3	15
25	Bilirubin Oxidase-Based Nanobiocathode Working in Serum-Mimic Buffer for Implantable Biofuel Cell. *Electroanalysis*, **2013**, 25, 1359-1362	3	14
24	Kinetic characterization of Desulfovibrio gigas hydrogenase upon selective chemical modification of amino acid groups as a tool for structure-function relationships. *BBA - Proteins and Proteomics*, **2000**, 1481, 371-80		14
23	Increase of Redox Potential during the Evolution of Enzymes Degrading Recalcitrant Lignin. *Chemistry - A European Journal*, **2019**, 25, 2708-2712	4.8	14
22	Structural differences of oxidized iron-sulfur and nickel-iron cofactors in O2-tolerant and O2-sensitive hydrogenases studied by X-ray absorption spectroscopy. *Biochimica Et Biophysica Acta - Bioenergetics*, **2015**, 1847, 162-170	4.6	13
21	Electrochemical Biosensors Based on Membrane-Bound Enzymes in Biomimetic Configurations. *Sensors*, **2020**, 20,	3.8	12
20	Halides inhibition of multicopper oxidases studied by FTIR spectroelectrochemistry using azide as an active infrared probe. *Journal of Biological Inorganic Chemistry*, **2017**, 22, 1179-1186	3.7	11
19	Underpotential Photoelectrooxidation of Water by SnS2□accase Co-catalysts on Nanostructured Electrodes with Only Visible-Light Irradiation. *ChemElectroChem*, **2019**, 6, 2755-2761	4.3	9
18	Third-generation oxygen amperometric biosensor based on Trametes hirsuta laccase covalently bound to graphite electrode. *Chemical Papers*, **2015**, 69,	1.9	9

17	Laccase cathode approaches to physiological conditions by local pH acidification. *Electrochemistry Communications*, **2012**, 18, 37-40	5.1	8
16	pH-dependent redox behaviour of asymmetric viologens. *Journal of Electroanalytical Chemistry*, **1995**, 399, 163-167	4.1	8
15	Comparing Ligninolytic Capabilities of Bacterial and Fungal Dye-Decolorizing Peroxidases and Class-II Peroxidase-Catalases. *International Journal of Molecular Sciences*, **2021**, 22,	6.3	8
14	Electron transfer between viologen derivatives and the flavoprotein ferredoxin-NADP+ reductase. *Bioelectrochemistry*, **1995**, 38, 179-184		7
13	The covalent linkage of a viologen to a flavoprotein reductase transforms it into an oxidase. *FEBS Journal*, **1995**, 233, 593-9		7
12	Characterization of the [NiFeSe] hydrogenase from Desulfovibrio vulgaris Hildenborough. *Methods in Enzymology*, **2018**, 613, 169-201	1.7	7
11	Catalytic Activity and Proton Translocation of Reconstituted Respiratory Complex I Monitored by Surface-Enhanced Infrared Absorption Spectroscopy. *Langmuir*, **2018**, 34, 5703-5711	4	6
10	Bioelectrocatalytic Activity of W-Formate Dehydrogenase Covalently Immobilized on Functionalized Gold and Graphite Electrodes. *ACS Applied Materials & Interfaces*, **2021**, 13, 11891-11900	9.5	6
9	FTIR spectroscopy of metalloproteins. *Methods in Molecular Biology*, **2014**, 1122, 95-106	1.4	5
8	Potentiometric detection of ATP based on the transmembrane proton gradient generated by ATPase reconstituted on a gold electrode. *Bioelectrochemistry*, **2020**, 133, 107490	5.6	4
7	Physicochemical characterization of Acidiphilium sp. biofilms. *ChemPhysChem*, **2013**, 14, 1237-44	3.2	4
6	Molecular modulation of NiFe hydrogenase activity. *International Journal of Hydrogen Energy*, **2008**, 33, 1503-1508	6.7	4
5	Photoelectrocatalytic detection of NADH on n-type silicon semiconductors facilitated by carbon nanotube fibers. *Electrochimica Acta*, **2021**, 377, 138071	6.7	3
4	Biological Production of Hydrogen **2021**, 247-273		2
3	Electrochemical studies of galactose oxidase. *Electrochemical Science Advances*,e2100171		1
2	Novel Bioelectrocatalytic Strategies Based on Immobilized Redox Metalloenzymes on Tailored Electrodes. *ACS Symposium Series*, **2020**, 207-229	0.4	1
1	Hydrogenases and Alternative Energy Strategies **2010**, 213		