Thomas Happe

List of Publications by Year
in descending order

108 papers	8,995 citations	36271 51 h-index	40954 93 g-index
111 all docs	111 docs citations	111 times ranked	4160 citing authors

#	Article	IF	Citations
1	Biomimetic assembly and activation of [FeFe]-hydrogenases. Nature, 2013, 499, 66-69.	13.7	597
2	Hydrogen Production. Green Algae as a Source of Energy. Plant Physiology, 2001, 127, 740-748.	2.3	564
3	Spontaneous activation of [FeFe]-hydrogenases by an inorganic [2Fe] active site mimic. Nature Chemical Biology, 2013, 9, 607-609.	3.9	316
4	How oxygen attacks [FeFe] hydrogenases from photosynthetic organisms. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 17331-17336.	3.3	302
5	Isolation, characterization and N-terminal amino acid sequence of hydrogenase from the green alga Chlamydomonas reinhardtii. FEBS Journal, 1993, 214, 475-481.	0.2	267
6	A Novel Type of Iron Hydrogenase in the Green AlgaScenedesmus obliquus Is Linked to the Photosynthetic Electron Transport Chain. Journal of Biological Chemistry, 2001, 276, 6125-6132.	1.6	234
7	Expression of two [Fe]-hydrogenases in Chlamydomonas reinhardtii under anaerobic conditions. FEBS Journal, 2003, 270, 2750-2758.	0.2	228
8	Differential regulation of the Fe-hydrogenase during anaerobic adaptation in the green algaChlamydomonas reinhardtii. FEBS Journal, 2002, 269, 1022-1032.	0.2	219
9	Hydrogen production by Chlamydomonas reinhardtii: an elaborate interplay of electron sources and sinks. Planta, 2007, 227, 397-407.	1.6	187
10	Cyanobacterial H2 production ? a comparative analysis. Planta, 2004, 218, 350-359.	1.6	185
11	Identification and Characterization of the â€œSuperâ€Reducedâ€•State of the Hâ€Cluster in [FeFe] Hydrogenase: A New Building Block for the Catalytic Cycle?. Angewandte Chemie - International Edition, 2012, 51, 11458-11462.	7.2	184
12	Control of Hydrogen Photoproduction by the Proton Gradient Generated by Cyclic Electron Flow in <i>Chlamydomonas reinhardtii</i>. Plant Cell, 2011, 23, 2619-2630.	3.1	176
13	Analytical approaches to photobiological hydrogen production in unicellular green algae. Photosynthesis Research, 2009, 102, 523-540.	1.6	171
14	Autotrophic and Mixotrophic Hydrogen Photoproduction in Sulfur-Deprived Chlamydomonas Cells. Applied and Environmental Microbiology, 2005, 71, 6199-6205.	1.4	170
15	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.	6.6	167
16	Induction, localization and metal content of hydrogenase in the green alga Chlamydomonas reinhardtii. FEBS Journal, 1994, 222, 769-774.	0.2	164
17	Hydrogenases in green algae: do they save the algae's life and solve our energy problems?. Trends in Plant Science, 2002, 7, 246-250.	4.3	164
18	Electrocatalytic mechanism of reversible hydrogen cycling by enzymes and distinctions between the major classes of hydrogenases. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 11516-11521.	3.3	158

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19	Solar hydrogen-producing bionanodevice outperforms natural photosynthesis. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 20988-20991.	3.3	156
20	Nitrogen deprivation results in photosynthetic hydrogen production in Chlamydomonas reinhardtii. Planta, 2012, 235, 729-745.	1.6	138
21	Iron hydrogenases â€“ ancient enzymes in modern eukaryotes. Trends in Biochemical Sciences, 2002, 27, 148-153.	3.7	135
22	Spectroelectrochemical Characterization of the Active Site of the [FeFe] Hydrogenase HydA1 from <i>Chlamydomonas reinhardtii</i>. Biochemistry, 2009, 48, 7780-7786.	1.2	133
23	6Fe9-hydrogenases in green algae: photo-fermentation and hydrogen evolution under sulfur deprivation. International Journal of Hydrogen Energy, 2002, 27, 1431-1439.	3.8	130
24	Importance of the Protein Framework for Catalytic Activity of [FeFe]-Hydrogenases. Journal of Biological Chemistry, 2012, 287, 1489-1499.	1.6	129
25	Homologous and Heterologous Overexpression in Clostridium acetobutylicum and Characterization of Purified Clostridial and Algal Fe-Only Hydrogenases with High Specific Activities. Applied and Environmental Microbiology, 2005, 71, 2777-2781.	1.4	128
26	A structural view of synthetic cofactor integration into [FeFe]-hydrogenases. Chemical Science, 2016, 7, 959-968.	3.7	122
27	New Redox States Observed in [FeFe] Hydrogenases Reveal Redox Coupling Within the H-Cluster. Journal of the American Chemical Society, 2014, 136, 11339-11346.	6.6	121
28	Characterization of the Key Step for Light-driven Hydrogen Evolution in Green Algae. Journal of Biological Chemistry, 2009, 284, 36620-36627.	1.6	111
29	Alternative photosynthetic electron transport pathways during anaerobiosis in the green alga Chlamydomonas reinhardtii. Biochimica Et Biophysica Acta - Bioenergetics, 2011, 1807, 919-926.	0.5	111
30	How algae produce hydrogenâ€”news from the photosynthetic hydrogenase. Dalton Transactions, 2009, , 9960.	1.6	107
31	Isolation and first EPR characterization of the [FeFe]-hydrogenases from green algae. Biochimica Et Biophysica Acta - Bioenergetics, 2008, 1777, 410-416.	0.5	104
32	The [FeFe]â€hydrogenase maturase HydF from <i>Clostridium acetobutylicum</i> contains a CO and CN^{âˆ’} ligated iron cofactor. FEBS Letters, 2010, 584, 638-642.	1.3	94
33	Accumulating the hydride state in the catalytic cycle of [FeFe]-hydrogenases. Nature Communications, 2017, 8, 16115.	5.8	93
34	Isolation and molecular characterization of the [Fe]-hydrogenase from the unicellular green alga Chlorella fusca. Biochimica Et Biophysica Acta Gene Regulatory Mechanisms, 2002, 1576, 330-334.	2.4	88
35	Molecular basis of [FeFe]-hydrogenase function. Biochimica Et Biophysica Acta - Bioenergetics, 2013, 1827, 974-985.	0.5	88
36	A Redox Hydrogel Protects the O₂â€Sensitive [FeFe]â€Hydrogenase from <i>Chlamydomonas reinhardtii</i> from Oxidative Damage. Angewandte Chemie - International Edition, 2015, 54, 12329-12333.	7.2	87

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37	A novel screening protocol for the isolation of hydrogen producing Chlamydomonas reinhardtiistrains. BMC Plant Biology, 2008, 8, 107.	1.6	83
38	O2 Reactions at the Six-iron Active Site (H-cluster) in [FeFe]-Hydrogenase. Journal of Biological Chemistry, 2011, 286, 40614-40623.	1.6	80
39	Optimized over-expression of [FeFe] hydrogenases with high specific activity in Clostridium acetobutylicum. International Journal of Hydrogen Energy, 2008, 33, 6076-6081.	3.8	77
40	Enhancing hydrogen production of microalgae by redirecting electrons from photosystem I to hydrogenase. Energy and Environmental Science, 2014, 7, 3296-3301.	15.6	77
41	Protonation/reduction dynamics at the [4Feâ€"4S] cluster of the hydrogen-forming cofactor in [FeFe]-hydrogenases. Physical Chemistry Chemical Physics, 2018, 20, 3128-3140.	1.3	76
42	The exceptional photofermentative hydrogen metabolism of the green alga Chlamydomonas reinhardtii. Biochemical Society Transactions, 2005, 33, 39-41.	1.6	73
43	Pyruvate:Ferredoxin Oxidoreductase Is Coupled to Light-independent Hydrogen Production in Chlamydomonas reinhardtii. Journal of Biological Chemistry, 2013, 288, 4368-4377.	1.6	73
44	The Structure of the Active Site H-Cluster of [FeFe] Hydrogenase from the Green Alga Chlamydomonas reinhardtii Studied by X-ray Absorption Spectroscopy. Biochemistry, 2009, 48, 5042-5049.	1.2	68
45	Multiple ferredoxin isoforms in Chlamydomonas reinhardtii â€" Their role under stress conditions and biotechnological implications. European Journal of Cell Biology, 2010, 89, 998-1004.	1.6	67
46	A pyruvate formate lyaseâ€deficient <i>Chlamydomonas reinhardtii</i> strain provides evidence for a link between fermentation and hydrogen production in green algae. Plant Journal, 2011, 66, 330-340.	2.8	61
47	A novel, anaerobically induced ferredoxin in <i>Chlamydomonas reinhardtii</i>. FEBS Letters, 2009, 583, 325-329.	1.3	60
48	Electronic and molecular structures of the active-site H-cluster in [FeFe]-hydrogenase determined by site-selective X-ray spectroscopy and quantum chemical calculations. Chemical Science, 2014, 5, 1187-1203.	3.7	60
49	Crystallographic and spectroscopic assignment of the proton transfer pathway in [FeFe]-hydrogenases. Nature Communications, 2018, 9, 4726.	5.8	60
50	Hydride Binding to the Active Site of [FeFe]-Hydrogenase. Inorganic Chemistry, 2014, 53, 12164-12177.	1.9	58
51	Protonâ€Coupled Reduction of the Catalytic [4Feâ€4S] Cluster in [FeFe]â€Hydrogenases. Angewandte Chemie - International Edition, 2017, 56, 16503-16506.	7.2	56
52	The [FeFe]-hydrogenase maturation protein HydF contains a H-cluster like [4Fe4S]-2Fe site. FEBS Letters, 2011, 585, 225-230.	1.3	53
53	[FeFe]â€Hydrogenase with Chalcogenide Substitutions at the Hâ€Cluster Maintains Full H₂ Evolution Activity. Angewandte Chemie - International Edition, 2016, 55, 8396-8400.	7.2	53
54	Bridging Hydride at Reduced H-Cluster Species in [FeFe]-Hydrogenases Revealed by Infrared Spectroscopy, Isotope Editing, and Quantum Chemistry. Journal of the American Chemical Society, 2017, 139, 12157-12160.	6.6	53

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55	Preventing the coffee-ring effect and aggregate sedimentation by <i>in situ</i> gelation of monodisperse materials. Chemical Science, 2018, 9, 7596-7605.	3.7	53
56	Vibrational spectroscopy reveals the initial steps of biological hydrogen evolution. Chemical Science, 2016, 7, 6746-6752.	3.7	52
57	Association of Ferredoxin:NADP+ oxidoreductase with the photosynthetic apparatus modulates electron transfer in Chlamydomonas reinhardtii. Photosynthesis Research, 2017, 134, 291-306.	1.6	52
58	Chalcogenide substitution in the [2Fe] cluster of [FeFe]-hydrogenases conserves high enzymatic activity. Dalton Transactions, 2017, 46, 16947-16958.	1.6	48
59	The roles of long-range proton-coupled electron transfer in the directionality and efficiency of [FeFe]-hydrogenases. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 20520-20529.	3.3	48
60	Frequency and potential dependence of reversible electrocatalytic hydrogen interconversion by [FeFe]-hydrogenases. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 3843-3848.	3.3	47
61	Flavodiiron-Mediated O₂ Photoreduction Links H₂ Production with CO₂ Fixation during the Anaerobic Induction of Photosynthesis. Plant Physiology, 2018, 177, 1639-1649.	2.3	47
62	Sunlightâ€Dependent Hydrogen Production by Photosensitizer/Hydrogenase Systems. ChemSusChem, 2017, 10, 894-902.	3.6	44
63	Immobilization of the [FeFe]-hydrogenase CrHydA1 on a gold electrode: Design of a catalytic surface for the production of molecular hydrogen. Journal of Biotechnology, 2009, 142, 3-9.	1.9	43
64	Interplay between CN^{â€“} Ligands and the Secondary Coordination Sphere of the H-Cluster in [FeFe]-Hydrogenases. Journal of the American Chemical Society, 2017, 139, 18222-18230.	6.6	42
65	A safety cap protects hydrogenase from oxygen attack. Nature Communications, 2021, 12, 756.	5.8	42
66	Hydrogen and oxygen trapping at the H-cluster of [FeFe]-hydrogenase revealed by site-selective spectroscopy and QM/MM calculations. Biochimica Et Biophysica Acta - Bioenergetics, 2018, 1859, 28-41.	0.5	39
67	Electrochemical Investigations of the Mechanism of Assembly of the Active-Site H-Cluster of [FeFe]-Hydrogenases. Journal of the American Chemical Society, 2016, 138, 15227-15233.	6.6	38
68	How [FeFe]-Hydrogenase Facilitates Bidirectional Proton Transfer. Journal of the American Chemical Society, 2019, 141, 17394-17403.	6.6	38
69	Shedding Light on Proton and Electron Dynamics in [FeFe] Hydrogenases. Journal of the American Chemical Society, 2020, 142, 5493-5497.	6.6	38
70	His-Ligation to the [4Feâ€“4S] Subcluster Tunes the Catalytic Bias of [FeFe] Hydrogenase. Journal of the American Chemical Society, 2019, 141, 472-481.	6.6	32
71	Inhibition of [FeFe]-Hydrogenases by Formaldehyde and Wider Mechanistic Implications for Biohydrogen Activation. Journal of the American Chemical Society, 2012, 134, 7553-7557.	6.6	31
72	Formaldehydeâ€”A Rapid and Reversible Inhibitor of Hydrogen Production by [FeFe]-Hydrogenases. Journal of the American Chemical Society, 2011, 133, 1282-1285.	6.6	30

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73	Differential Expression of the <i>Chlamydomonas</i> [FeFe]-Hydrogenase-Encoding <i>HYDA1</i> Gene Is Regulated by the COPPER RESPONSE REGULATOR1 Â Â. Plant Physiology, 2012, 159, 1700-1712.	2.3	30
74	Geometry of the Catalytic Active Site in [FeFe]-Hydrogenase Is Determined by Hydrogen Bonding and Proton Transfer. ACS Catalysis, 2019, 9, 9140-9149.	5.5	30
75	Light driven hydrogen production in protein based semi-artificial systems. Bioresource Technology, 2011, 102, 8493-8500.	4.8	29
76	Lyophilization protects [FeFe]-hydrogenases against O2-induced H-cluster degradation. Scientific Reports, 2015, 5, 13978.	1.6	26
77	Loss of Specific Active-Site Iron Atoms in Oxygen-Exposed [FeFe]-Hydrogenase Determined by Detailed X-ray Structure Analyses. Journal of the American Chemical Society, 2019, 141, 17721-17728.	6.6	26
78	Compartmentalisation of [FeFe]â€hydrogenase maturation in <i>Chlamydomonas reinhardtii</i>. Plant Journal, 2017, 90, 1134-1143.	2.8	23
79	Ironâ€"sulphur cluster biogenesisviathe SUF pathway. Metallomics, 2018, 10, 1038-1052.	1.0	22
80	Extending electron paramagnetic resonance to nanoliter volume protein single crystals using a self-resonant microhelix. Science Advances, 2019, 5, eaay1394.	4.7	21
81	Influence of the [4Feâ€"4S] cluster coordinating cysteines on active site maturation and catalytic properties of <i>C. reinhardtii</i> [FeFe]-hydrogenase. Chemical Science, 2017, 8, 8127-8137.	3.7	20
82	The final steps of [FeFe]-hydrogenase maturation. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 15802-15810.	3.3	19
83	Differential Protonation at the Catalytic Six-Iron Cofactor of [FeFe]-Hydrogenases Revealed by ⁵⁷Fe Nuclear Resonance X-ray Scattering and Quantum Mechanics/Molecular Mechanics Analyses. Inorganic Chemistry, 2019, 58, 4000-4013.	1.9	19
84	Rational redesign of the ferredoxin-NADP+-oxido-reductase/ferredoxin-interaction for photosynthesis-dependent H2-production. Biochimica Et Biophysica Acta - Bioenergetics, 2018, 1859, 253-262.	0.5	18
85	Modelling Photosynthesis with Zn II â€Protoporphyrin Allâ€DNA Gâ€Quadruplex/Aptamer Scaffolds. Angewandte Chemie - International Edition, 2020, 59, 9163-9170.	7.2	17
86	Tailorâ€Made Modification of a Gold Surface for the Chemical Binding of a Highâ€Activity [FeFe] Hydrogenase. European Journal of Inorganic Chemistry, 2011, 2011, 1138-1146.	1.0	15
87	[FeFe]â€Hydrogenase with Chalcogenide Substitutions at the Hâ€Cluster Maintains Full H₂ Evolution Activity. Angewandte Chemie, 2016, 128, 8536-8540.	1.6	15
88	How Formaldehyde Inhibits Hydrogen Evolution by [FeFe]-Hydrogenases: Determination by ¹³C ENDOR of Direct Feâ€"C Coordination and Order of Electron and Proton Transfers. Journal of the American Chemical Society, 2015, 137, 5381-5389.	6.6	14
89	The structurally unique photosynthetic Chlorella variabilis NC64A hydrogenase does not interact with plant-type ferredoxins. Biochimica Et Biophysica Acta - Bioenergetics, 2017, 1858, 771-778.	0.5	14
90	The plasticity of redox cofactors: from metalloenzymes to redox-active DNA. Nature Reviews Chemistry, 2018, 2, 231-243.	13.8	13

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91	Site-selective protonation of the one-electron reduced cofactor in [FeFe]-hydrogenase. Dalton Transactions, 2021, 50, 3641-3650.	1.6	13
92	Identification of a Cis-Acting Element Controlling Anaerobic Expression of the Hyda Gene from Chlamydomonas Reinhardtii. , 2004, , 117-127.		12
93	The Isolation of Green Algal Strains with Outstanding H2-Productivity. , 2004, , 103-115.		11
94	One isoform for one task? The second hydrogenase of Chlamydomonas reinhardtii prefers hydrogen uptake. International Journal of Hydrogen Energy, 2021, 46, 7165-7175.	3.8	11
95	Electrochemical control of [FeFe]-hydrogenase single crystals reveals complex redox populations at the catalytic site. Dalton Transactions, 2021, 50, 12655-12663.	1.6	11
96	Solvent dynamics play a decisive role in the complex formation of biologically relevant redox proteins. Physical Chemistry Chemical Physics, 2020, 22, 7451-7459.	1.3	10
97	Spectroscopical Investigations on the Redox Chemistry of [FeFe]-Hydrogenases in the Presence of Carbon Monoxide. Molecules, 2018, 23, 1669.	1.7	9
98	Modelling Photosynthesis with Zn II â€Protoporphyrin Allâ€DNA Gâ€Quadruplex/Aptamer Scaffolds. Angewandte Chemie, 2020, 132, 9248-9255.	1.6	8
99	Protonengekoppelte Reduktion des katalytischen [4Feâ€4S]â€Zentrums in [FeFe]â€Hydrogenasen. Angewandte Chemie, 2017, 129, 16728-16732.	1.6	7
100	[FeFe]-hydrogenases from green algae. Methods in Enzymology, 2018, 613, 203-230.	0.4	6
101	Fine-tuning of FeS proteins monitored via pulsed EPR redox potentiometry at Q-band. Biophysical Reports, 2021, 1, 100016.	0.7	5
102	Biofuel from algae photobiological hydrogen production and CO<SUB align=right>2-fixation. International Journal of Energy Technology and Policy, 2007, 5, 290.	0.1	4
103	The oxygen-resistant [FeFe]-hydrogenase CbA5H harbors an unknown radical signal. Chemical Science, 2022, 13, 7289-7294.	3.7	3
104	7 Hydrogen production by natural and semiartificial systems. , 0, , .		1
105	3 Catalytic properties and maturation of [FeFe]-hydrogenases. , 0, , .		1
106	In memory of Achim Trebst (1929â€“2017): a pioneer of photosynthesis research. Photosynthesis Research, 2018, 137, 341-359.	1.6	1
107	7. Eukaryotic microalgae in biotechnological applications. , 2015, , 165-196.		0
108	Chlamydomonas: Hydrogenase and Hydrogen Production. Microbiology Monographs, 2017, , 21-44.	0.3	0