

# Thomas Happe

## List of Publications by Year in descending order

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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	The oxygen-resistant [FeFe]-hydrogenase CbA5H harbors an unknown radical signal. <i>Chemical Science</i> , 2022, 13, 7289-7294.	3.7	3
2	One isoform for one task? The second hydrogenase of <i>Chlamydomonas reinhardtii</i> prefers hydrogen uptake. <i>International Journal of Hydrogen Energy</i> , 2021, 46, 7165-7175.	3.8	11
3	Site-selective protonation of the one-electron reduced cofactor in [FeFe]-hydrogenase. <i>Dalton Transactions</i> , 2021, 50, 3641-3650.	1.6	13
4	A safety cap protects hydrogenase from oxygen attack. <i>Nature Communications</i> , 2021, 12, 756.	5.8	42
5	Fine-tuning of FeS proteins monitored via pulsed EPR redox potentiometry at Q-band. <i>Biophysical Reports</i> , 2021, 1, 100016.	0.7	5
6	Electrochemical control of [FeFe]-hydrogenase single crystals reveals complex redox populations at the catalytic site. <i>Dalton Transactions</i> , 2021, 50, 12655-12663.	1.6	11
7	The roles of long-range proton-coupled electron transfer in the directionality and efficiency of [FeFe]-hydrogenases. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 20520-20529.	3.3	48
8	Solvent dynamics play a decisive role in the complex formation of biologically relevant redox proteins. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 7451-7459.	1.3	10
9	Modelling Photosynthesis with Zn II $\propto$ Protoporphyrin All $\propto$ DNA $\propto$ Quadruplex/Aptamer Scaffolds. <i>Angewandte Chemie</i> , 2020, 132, 9248-9255.	1.6	8
10	Shedding Light on Proton and Electron Dynamics in [FeFe] Hydrogenases. <i>Journal of the American Chemical Society</i> , 2020, 142, 5493-5497.	6.6	38
11	Modelling Photosynthesis with Zn II $\propto$ Protoporphyrin All $\propto$ DNA $\propto$ Quadruplex/Aptamer Scaffolds. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 9163-9170.	7.2	17
12	The final steps of [FeFe]-hydrogenase maturation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 15802-15810.	3.3	19
13	Loss of Specific Active-Site Iron Atoms in Oxygen-Exposed [FeFe]-Hydrogenase Determined by Detailed X-ray Structure Analyses. <i>Journal of the American Chemical Society</i> , 2019, 141, 17721-17728.	6.6	26
14	Geometry of the Catalytic Active Site in [FeFe]-Hydrogenase Is Determined by Hydrogen Bonding and Proton Transfer. <i>ACS Catalysis</i> , 2019, 9, 9140-9149.	5.5	30
15	How [FeFe]-Hydrogenase Facilitates Bidirectional Proton Transfer. <i>Journal of the American Chemical Society</i> , 2019, 141, 17394-17403.	6.6	38
16	Extending electron paramagnetic resonance to nanoliter volume protein single crystals using a self-resonant microhelix. <i>Science Advances</i> , 2019, 5, eaay1394.	4.7	21
17	Differential Protonation at the Catalytic Six-Iron Cofactor of [FeFe]-Hydrogenases Revealed by <sup>57</sup> Fe Nuclear Resonance X-ray Scattering and Quantum Mechanics/Molecular Mechanics Analyses. <i>Inorganic Chemistry</i> , 2019, 58, 4000-4013.	1.9	19
18	His-Ligation to the [4Fe $\propto$ 4S] Subcluster Tunes the Catalytic Bias of [FeFe] Hydrogenase. <i>Journal of the American Chemical Society</i> , 2019, 141, 472-481.	6.6	32

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19	Rational redesign of the ferredoxin-NADP <sup>+</sup> -oxido-reductase/ferredoxin-interaction for photosynthesis-dependent H <sub>2</sub> -production. <i>Biochimica Et Biophysica Acta - Bioenergetics</i> , 2018, 1859, 253-262.	0.5	18
20	Protonation/reduction dynamics at the [4Fe-4S] cluster of the hydrogen-forming cofactor in [FeFe]-hydrogenases. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 3128-3140.	1.3	76
21	Hydrogen and oxygen trapping at the H-cluster of [FeFe]-hydrogenase revealed by site-selective spectroscopy and QM/MM calculations. <i>Biochimica Et Biophysica Acta - Bioenergetics</i> , 2018, 1859, 28-41.	0.5	39
22	Crystallographic and spectroscopic assignment of the proton transfer pathway in [FeFe]-hydrogenases. <i>Nature Communications</i> , 2018, 9, 4726.	5.8	60
23	[FeFe]-hydrogenases from green algae. <i>Methods in Enzymology</i> , 2018, 613, 203-230.	0.4	6
24	In memory of Achim Trebst (1929-2017): a pioneer of photosynthesis research. <i>Photosynthesis Research</i> , 2018, 137, 341-359.	1.6	1
25	Spectroscopical Investigations on the Redox Chemistry of [FeFe]-Hydrogenases in the Presence of Carbon Monoxide. <i>Molecules</i> , 2018, 23, 1669.	1.7	9
26	Flavodiiron-Mediated O <sub>2</sub> Photoreduction Links H <sub>2</sub> Production with CO <sub>2</sub> Fixation during the Anaerobic Induction of Photosynthesis. <i>Plant Physiology</i> , 2018, 177, 1639-1649.	2.3	47
27	Iron-sulphur cluster biogenesis via the SUF pathway. <i>Metallomics</i> , 2018, 10, 1038-1052.	1.0	22
28	The plasticity of redox cofactors: from metalloenzymes to redox-active DNA. <i>Nature Reviews Chemistry</i> , 2018, 2, 231-243.	13.8	13
29	Preventing the coffee-ring effect and aggregate sedimentation by <i>in situ</i> gelation of monodisperse materials. <i>Chemical Science</i> , 2018, 9, 7596-7605.	3.7	53
30	The structurally unique photosynthetic <i>Chlorella variabilis</i> NC64A hydrogenase does not interact with plant-type ferredoxins. <i>Biochimica Et Biophysica Acta - Bioenergetics</i> , 2017, 1858, 771-778.	0.5	14
31	Frequency and potential dependence of reversible electrocatalytic hydrogen interconversion by [FeFe]-hydrogenases. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 3843-3848.	3.3	47
32	Compartmentalisation of [FeFe]-hydrogenase maturation in <i>Chlamydomonas reinhardtii</i> . <i>Plant Journal</i> , 2017, 90, 1134-1143.	2.8	23
33	Sunlight-Dependent Hydrogen Production by Photosensitizer/Hydrogenase Systems. <i>ChemSusChem</i> , 2017, 10, 894-902.	3.6	44
34	Proton-Coupled Reduction of the Catalytic [4Fe-4S] Cluster in [FeFe]-Hydrogenases. <i>Angewandte Chemie - International Edition</i> , 2017, 56, 16503-16506.	7.2	56
35	Influence of the [4Fe-4S] cluster coordinating cysteines on active site maturation and catalytic properties of <i>C. reinhardtii</i> [FeFe]-hydrogenase. <i>Chemical Science</i> , 2017, 8, 8127-8137.	3.7	20
36	Bridging Hydride at Reduced H-Cluster Species in [FeFe]-Hydrogenases Revealed by Infrared Spectroscopy, Isotope Editing, and Quantum Chemistry. <i>Journal of the American Chemical Society</i> , 2017, 139, 12157-12160.	6.6	53

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37	Accumulating the hydride state in the catalytic cycle of [FeFe]-hydrogenases. Nature Communications, 2017, 8, 16115.	5.8	93
38	Protonengekoppelte Reduktion des katalytischen [4Fe $\mu$ 4S] $\mu$ Zentrums in [FeFe] $\mu$ Hydrogenasen. Angewandte Chemie, 2017, 129, 16728-16732.	1.6	7
39	Interplay between CN <sup>“</sup> 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
40	Chalcogenide substitution in the [2Fe] cluster of [FeFe]-hydrogenases conserves high enzymatic activity. Dalton Transactions, 2017, 46, 16947-16958.	1.6	48
41	Association of Ferredoxin:NADP <sup>+</sup> oxidoreductase with the photosynthetic apparatus modulates electron transfer in Chlamydomonas reinhardtii. Photosynthesis Research, 2017, 134, 291-306.	1.6	52
42	Chlamydomonas: Hydrogenase and Hydrogen Production. Microbiology Monographs, 2017, , 21-44.	0.3	0
43	[FeFe] $\mu$ Hydrogenase with Chalcogenide Substitutions at the H $\mu$ Cluster Maintains Full H <sub>2</sub> Evolution Activity. Angewandte Chemie - International Edition, 2016, 55, 8396-8400.	7.2	53
44	Vibrational spectroscopy reveals the initial steps of biological hydrogen evolution. Chemical Science, 2016, 7, 6746-6752.	3.7	52
45	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
46	[FeFe] $\mu$ Hydrogenase with Chalcogenide Substitutions at the H $\mu$ Cluster Maintains Full H <sub>2</sub> Evolution Activity. Angewandte Chemie, 2016, 128, 8536-8540.	1.6	15
47	A structural view of synthetic cofactor integration into [FeFe]-hydrogenases. Chemical Science, 2016, 7, 959-968.	3.7	122
48	Lyophilization protects [FeFe]-hydrogenases against O <sub>2</sub> -induced H-cluster degradation. Scientific Reports, 2015, 5, 13978.	1.6	26
49	A Redox Hydrogel Protects the O <sub>2</sub> -Sensitive [FeFe] $\mu$ Hydrogenase from <i>Chlamydomonas reinhardtii</i> from Oxidative Damage. Angewandte Chemie - International Edition, 2015, 54, 12329-12333.	7.2	87
50	7. Eukaryotic microalgae in biotechnological applications. , 2015, , 165-196.		0
51	How Formaldehyde Inhibits Hydrogen Evolution by [FeFe]-Hydrogenases: Determination by <sup>13</sup> C ENDOR of Direct Fe $\mu$ C Coordination and Order of Electron and Proton Transfers. Journal of the American Chemical Society, 2015, 137, 5381-5389.	6.6	14
52	Hydride Binding to the Active Site of [FeFe]-Hydrogenase. Inorganic Chemistry, 2014, 53, 12164-12177.	1.9	58
53	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
54	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

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55	Enhancing hydrogen production of microalgae by redirecting electrons from photosystem I to hydrogenase. <i>Energy and Environmental Science</i> , 2014, 7, 3296-3301.	15.6	77
56	Spontaneous activation of [FeFe]-hydrogenases by an inorganic [2Fe] active site mimic. <i>Nature Chemical Biology</i> , 2013, 9, 607-609.	3.9	316
57	Pyruvate:Ferredoxin Oxidoreductase Is Coupled to Light-independent Hydrogen Production in <i>Chlamydomonas reinhardtii</i> . <i>Journal of Biological Chemistry</i> , 2013, 288, 4368-4377.	1.6	73
58	Molecular basis of [FeFe]-hydrogenase function. <i>Biochimica Et Biophysica Acta - Bioenergetics</i> , 2013, 1827, 974-985.	0.5	88
59	Biomimetic assembly and activation of [FeFe]-hydrogenases. <i>Nature</i> , 2013, 499, 66-69.	13.7	597
60	Electrocatalytic mechanism of reversible hydrogen cycling by enzymes and distinctions between the major classes of hydrogenases. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 11516-11521.	3.3	158
61	Differential Expression of the <i>Chlamydomonas</i> [FeFe]-Hydrogenase-Encoding <i>HYDA1</i> Gene Is Regulated by the COPPER RESPONSE REGULATOR1. <i>Plant Physiology</i> , 2012, 159, 1700-1712.	2.3	30
62	Importance of the Protein Framework for Catalytic Activity of [FeFe]-Hydrogenases. <i>Journal of Biological Chemistry</i> , 2012, 287, 1489-1499.	1.6	129
63	Identification and Characterization of the "Super-Reduced" State of the H-cluster in [FeFe] Hydrogenase: A New Building Block for the Catalytic Cycle?. <i>Angewandte Chemie - International Edition</i> , 2012, 51, 11458-11462.	7.2	184
64	Inhibition of [FeFe]-Hydrogenases by Formaldehyde and Wider Mechanistic Implications for Biohydrogen Activation. <i>Journal of the American Chemical Society</i> , 2012, 134, 7553-7557.	6.6	31
65	Nitrogen deprivation results in photosynthetic hydrogen production in <i>Chlamydomonas reinhardtii</i> . <i>Planta</i> , 2012, 235, 729-745.	1.6	138
66	Formaldehyde: A Rapid and Reversible Inhibitor of Hydrogen Production by [FeFe]-Hydrogenases. <i>Journal of the American Chemical Society</i> , 2011, 133, 1282-1285.	6.6	30
67	O <sub>2</sub> Reactions at the Six-iron Active Site (H-cluster) in [FeFe]-Hydrogenase. <i>Journal of Biological Chemistry</i> , 2011, 286, 40614-40623.	1.6	80
68	A pyruvate formate lyase-deficient <i>Chlamydomonas reinhardtii</i> strain provides evidence for a link between fermentation and hydrogen production in green algae. <i>Plant Journal</i> , 2011, 66, 330-340.	2.8	61
69	The [FeFe]-hydrogenase maturation protein HydF contains a H-cluster like [4Fe4S]-2Fe site. <i>FEBS Letters</i> , 2011, 585, 225-230.	1.3	53
70	Alternative photosynthetic electron transport pathways during anaerobiosis in the green alga <i>Chlamydomonas reinhardtii</i> . <i>Biochimica Et Biophysica Acta - Bioenergetics</i> , 2011, 1807, 919-926.	0.5	111
71	Light driven hydrogen production in protein based semi-artificial systems. <i>Bioresource Technology</i> , 2011, 102, 8493-8500.	4.8	29
72	Tailor-Made Modification of a Gold Surface for the Chemical Binding of a High-Activity [FeFe] Hydrogenase. <i>European Journal of Inorganic Chemistry</i> , 2011, 2011, 1138-1146.	1.0	15

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73	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
74	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
75	Multiple ferredoxin isoforms in <i>Chlamydomonas reinhardtii</i> – Their role under stress conditions and biotechnological implications. European Journal of Cell Biology, 2010, 89, 998-1004.	1.6	67
76	The [FeFe]-hydrogenase maturase HydF from <i>Clostridium acetobutylicum</i> contains a CO and CN <sup>+</sup> ligated iron cofactor. FEBS Letters, 2010, 584, 638-642.	1.3	94
77	Characterization of the Key Step for Light-driven Hydrogen Evolution in Green Algae. Journal of Biological Chemistry, 2009, 284, 36620-36627.	1.6	111
78	A novel, anaerobically induced ferredoxin in <i>Chlamydomonas reinhardtii</i> . FEBS Letters, 2009, 583, 325-329.	1.3	60
79	Analytical approaches to photobiological hydrogen production in unicellular green algae. Photosynthesis Research, 2009, 102, 523-540.	1.6	171
80	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
81	The Structure of the Active Site H-Cluster of [FeFe] Hydrogenase from the Green Alga <i>Chlamydomonas reinhardtii</i> Studied by X-ray Absorption Spectroscopy. Biochemistry, 2009, 48, 5042-5049.	1.2	68
82	Spectroelectrochemical Characterization of the Active Site of the [FeFe] Hydrogenase HydA1 from <i>Chlamydomonas reinhardtii</i> . Biochemistry, 2009, 48, 7780-7786.	1.2	133
83	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
84	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
85	How algae produce hydrogen – news from the photosynthetic hydrogenase. Dalton Transactions, 2009, , 9960.	1.6	107
86	Optimized over-expression of [FeFe] hydrogenases with high specific activity in <i>Clostridium acetobutylicum</i> . International Journal of Hydrogen Energy, 2008, 33, 6076-6081.	3.8	77
87	A novel screening protocol for the isolation of hydrogen producing <i>Chlamydomonas reinhardtii</i> strains. BMC Plant Biology, 2008, 8, 107.	1.6	83
88	Isolation and first EPR characterization of the [FeFe]-hydrogenases from green algae. Biochimica Et Biophysica Acta - Bioenergetics, 2008, 1777, 410-416.	0.5	104
89	Biofuel from algae photobiological hydrogen production and CO <sub>2</sub> -fixation. International Journal of Energy Technology and Policy, 2007, 5, 290.	0.1	4
90	Hydrogen production by <i>Chlamydomonas reinhardtii</i> : an elaborate interplay of electron sources and sinks. Planta, 2007, 227, 397-407.	1.6	187

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91	The exceptional photofermentative hydrogen metabolism of the green alga <i>Chlamydomonas reinhardtii</i> . <i>Biochemical Society Transactions</i> , 2005, 33, 39-41.	1.6	73
92	Autotrophic and Mixotrophic Hydrogen Photoproduction in Sulfur-Deprived <i>Chlamydomonas</i> Cells. <i>Applied and Environmental Microbiology</i> , 2005, 71, 6199-6205.	1.4	170
93	Homologous and Heterologous Overexpression in <i>Clostridium acetobutylicum</i> and Characterization of Purified Clostridial and Algal Fe-Only Hydrogenases with High Specific Activities. <i>Applied and Environmental Microbiology</i> , 2005, 71, 2777-2781.	1.4	128
94	The Isolation of Green Algal Strains with Outstanding H <sub>2</sub> -Productivity. , 2004, , 103-115.		11
95	Cyanobacterial H <sub>2</sub> production ? a comparative analysis. <i>Planta</i> , 2004, 218, 350-359.	1.6	185
96	Identification of a Cis-Acting Element Controlling Anaerobic Expression of the Hyda Gene from <i>Chlamydomonas Reinhardtii</i> . , 2004, , 117-127.		12
97	Expression of two [Fe]-hydrogenases in <i>Chlamydomonas reinhardtii</i> under anaerobic conditions. <i>FEBS Journal</i> , 2003, 270, 2750-2758.	0.2	228
98	Hydrogenases in green algae: do they save the algae's life and solve our energy problems?. <i>Trends in Plant Science</i> , 2002, 7, 246-250.	4.3	164
99	Isolation and molecular characterization of the [Fe]-hydrogenase from the unicellular green alga <i>Chlorella fusca</i> . <i>Biochimica Et Biophysica Acta Gene Regulatory Mechanisms</i> , 2002, 1576, 330-334.	2.4	88
100	Iron hydrogenases – ancient enzymes in modern eukaryotes. <i>Trends in Biochemical Sciences</i> , 2002, 27, 148-153.	3.7	135
101	Differential regulation of the Fe-hydrogenase during anaerobic adaptation in the green alga <i>Chlamydomonas reinhardtii</i> . <i>FEBS Journal</i> , 2002, 269, 1022-1032.	0.2	219
102	6Fe9-hydrogenases in green algae: photo-fermentation and hydrogen evolution under sulfur deprivation. <i>International Journal of Hydrogen Energy</i> , 2002, 27, 1431-1439.	3.8	130
103	Hydrogen Production. Green Algae as a Source of Energy. <i>Plant Physiology</i> , 2001, 127, 740-748.	2.3	564
104	A Novel Type of Iron Hydrogenase in the Green Alga <i>Scenedesmus obliquus</i> Is Linked to the Photosynthetic Electron Transport Chain. <i>Journal of Biological Chemistry</i> , 2001, 276, 6125-6132.	1.6	234
105	Induction, localization and metal content of hydrogenase in the green alga <i>Chlamydomonas reinhardtii</i> . <i>FEBS Journal</i> , 1994, 222, 769-774.	0.2	164
106	Isolation, characterization and N-terminal amino acid sequence of hydrogenase from the green alga <i>Chlamydomonas reinhardtii</i> . <i>FEBS Journal</i> , 1993, 214, 475-481.	0.2	267
107	7 Hydrogen production by natural and semiartificial systems. , 0, , .		1
108	3 Catalytic properties and maturation of [FeFe]-hydrogenases. , 0, , .		1