Markus W Ribbe

List of Publications by Citations

103 papers	4,966 citations	40 h-index	69 g-index
114 ext. papers	5,807 ext. citations	13 avg, IF	5.94 L-index

#	Paper	IF	Citations
103	X-ray emission spectroscopy evidences a central carbon in the nitrogenase iron-molybdenum cofactor. *Science*, **2011**, 334, 974-7	33.3	659
102	Molybdenum cofactors, enzymes and pathways. *Nature*, **2009**, 460, 839-47	50.4	555
101	Radical SAM-dependent carbon insertion into the nitrogenase M-cluster. *Science*, **2012**, 337, 1672-5	33.3	212
100	Vanadium nitrogenase reduces CO. *Science*, **2010**, 329, 642	33.3	204
99	Extending the carbon chain: hydrocarbon formation catalyzed by vanadium/molybdenum nitrogenases. *Science*, **2011**, 333, 753-5	33.3	187
98	Structure of a cofactor-deficient nitrogenase MoFe protein. *Science*, **2002**, 296, 352-6	33.3	139
97	Biosynthesis of nitrogenase metalloclusters. *Chemical Reviews*, **2014**, 114, 4063-80	68.1	103
96	Identification of a nitrogenase FeMo cofactor precursor on NifEN complex. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 3236-41	11.5	102
95	Unique features of the nitrogenase VFe protein from Azotobacter vinelandii. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 9209-14	11.5	101
94	Structure of precursor-bound NifEN: a nitrogenase FeMo cofactor maturase/insertase. *Science*, **2011**, 331, 91-4	33.3	97
93	Vanadium nitrogenase: a two-hit wonder?. *Dalton Transactions*, **2012**, 41, 1118-27	4.3	96
92	Structural insights into a protein-bound iron-molybdenum cofactor precursor. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 1238-43	11.5	92
91	FeMo cofactor maturation on NifEN. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 17119-24	11.5	89
90	Characterization of isolated nitrogenase FeVco. *Journal of the American Chemical Society*, **2010**, 132, 12612-8	16.4	88
89	X-ray spectroscopic observation of an interstitial carbide in NifEN-bound FeMoco precursor. *Journal of the American Chemical Society*, **2013**, 135, 610-2	16.4	87
88	Assembly of nitrogenase MoFe protein. *Biochemistry*, **2008**, 47, 3973-81	3.2	81
87	Nitrogenase and homologs. *Journal of Biological Inorganic Chemistry*, **2015**, 20, 435-45	3.7	78

86	Biosynthesis of the Metalloclusters of Nitrogenases. *Annual Review of Biochemistry*, **2016**, 85, 455-83	29.1	74
85	Nitrogenase Fe protein: A molybdate/homocitrate insertase. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 17125-30	11.5	71
84	NifEN-B complex of Azotobacter vinelandii is fully functional in nitrogenase FeMo cofactor assembly. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 8623-7	11.5	63
83	P-cluster maturation on nitrogenase MoFe protein. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 10424-9	11.5	62
82	Structural evidence for a dynamic metallocofactor during N reduction by Mo-nitrogenase. *Science*, **2020**, 368, 1381-1385	33.3	57
81	Reactivity, Mechanism, and Assembly of the Alternative Nitrogenases. *Chemical Reviews*, **2020**, 120, 5107-5157	63.1	56
80	The FeMoco-deficient MoFe protein produced by a nifH deletion strain of Azotobacter vinelandii shows unusual P-cluster features. *Journal of Biological Chemistry*, **2002**, 277, 23469-76	5.4	56
79	Refining the pathway of carbide insertion into the nitrogenase M-cluster. *Nature Communications*, **2015**, 6, 8034	17.4	55
78	Tracing the interstitial carbide of the nitrogenase cofactor during substrate turnover. *Journal of the American Chemical Society*, **2013**, 135, 4982-3	16.4	55
77	Direct assessment of the reduction potential of the [4Fe-4S](1+/0) couple of the Fe protein from Azotobacter vinelandii. *Journal of the American Chemical Society*, **2002**, 124, 12100-1	16.4	55
76	Differential reduction of CO_2 by molybdenum and vanadium nitrogenases. *Angewandte Chemie - International Edition*, **2014**, 53, 11543-6	16.4	54
75	ATP-independent formation of hydrocarbons catalyzed by isolated nitrogenase cofactors. *Angewandte Chemie - International Edition*, **2012**, 51, 1947-9	16.4	54
74	Comparison of iron-molybdenum cofactor-deficient nitrogenase MoFe proteins by X-ray absorption spectroscopy: implications for P-cluster biosynthesis. *Journal of Biological Chemistry*, **2004**, 279, 28276-82	5.4	54
73	Spectroscopic characterization of the isolated iron-molybdenum cofactor (FeMoco) precursor from the protein NifEN. *Angewandte Chemie - International Edition*, **2011**, 50, 7787-90	16.4	51
72	Catalytic reduction of CN-, CO, and CO_2 by nitrogenase cofactors in lanthanide-driven reactions. *Angewandte Chemie - International Edition*, **2015**, 54, 1219-22	16.4	48
71	Biosynthesis of the iron-molybdenum cofactor of nitrogenase. *Journal of Biological Chemistry*, **2013**, 288, 13173-7	5.4	46
70	Nitrogenases-A Tale of Carbon Atom(s). *Angewandte Chemie - International Edition*, **2016**, 55, 8216-26	16.4	46
69	Characterization of Azotobacter vinelandii nifZ deletion strains. Indication of stepwise MoFe protein assembly. *Journal of Biological Chemistry*, **2004**, 279, 54963-71	5.4	45

68	Optimization of FeMoco maturation on NifEN. *Journal of the American Chemical Society*, **2009**, 131, 9321-5	16.4	44
67	Stepwise formation of P-cluster in nitrogenase MoFe protein. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 18474-8	11.5	43
66	Nitrogenase reactivity with P-cluster variants. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 13825-30	11.5	42
65	Tracing the 'ninth sulfur' of the nitrogenase cofactor via a semi-synthetic approach. *Nature Chemistry*, **2018**, 10, 568-572	17.6	41
64	Tracing the hydrogen source of hydrocarbons formed by vanadium nitrogenase. *Angewandte Chemie - International Edition*, **2011**, 50, 5545-7	16.4	40
63	Uncoupling binding of substrate CO from turnover by vanadium nitrogenase. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 13845-9	11.5	34
62	Structure and Reactivity of an Asymmetric Synthetic Mimic of Nitrogenase Cofactor. *Angewandte Chemie - International Edition*, **2016**, 55, 15633-15636	16.4	33
61	Variable-temperature, variable-field magnetic circular dichroism spectroscopic study of the metal clusters in the DeltanifB and DeltanifH mofe proteins of nitrogenase from Azotobacter vinelandii. *Biochemistry*, **2006**, 45, 15039-48	3.2	31
60	Combining a Nitrogenase Scaffold and a Synthetic Compound into an Artificial Enzyme. *Angewandte Chemie - International Edition*, **2015**, 54, 14022-5	16.4	28
59	Maturation of nitrogenase cofactor-the role of a class E radical SAM methyltransferase NifB. *Current Opinion in Chemical Biology*, **2016**, 31, 188-94	9.7	27
58	Synthetic Analogues of Nitrogenase Metallocofactors: Challenges and Developments. *Chemistry - A European Journal*, **2017**, 23, 12425-12432	4.8	26
57	Structural models of the [Fe4S4] clusters of homologous nitrogenase Fe proteins. *Inorganic Chemistry*, **2011**, 50, 7123-8	5.1	26
56	VTVH-MCD study of the Delta nifB Delta nifZ MoFe protein from Azotobacter vinelandii. *Journal of the American Chemical Society*, **2009**, 131, 4558-9	16.4	24
55	Reduction of C Substrates to Hydrocarbons by the Homometallic Precursor and Synthetic Mimic of the Nitrogenase Cofactor. *Journal of the American Chemical Society*, **2017**, 139, 603-606	16.4	23
54	Nitrogenase Cofactor Assembly: An Elemental Inventory. *Accounts of Chemical Research*, **2017**, 50, 2834-2841	24.1	23
53	Molecular insights into nitrogenase FeMoco insertion: TRP-444 of MoFe protein alpha-subunit locks FeMoco in its binding site. *Journal of Biological Chemistry*, **2006**, 281, 30534-41	5.4	23
52	The in vivo hydrocarbon formation by vanadium nitrogenase follows a secondary metabolic pathway. *Nature Communications*, **2016**, 7, 13641	17.4	22
51	Activation of CO by Vanadium Nitrogenase. *Chemistry - an Asian Journal*, **2017**, 12, 1985-1996	4.5	21

50	Conformational differences between Azotobacter vinelandii nitrogenase MoFe proteins as studied by small-angle X-ray scattering. *Biochemistry*, **2007**, 46, 8066-74	3.2	20
49	The Fe Protein: An Unsung Hero of Nitrogenase. *Inorganics*, **2018**, 6, 25	2.9	19
48	P+ state of nitrogenase p-cluster exhibits electronic structure of a [Fe4S4]+ cluster. *Journal of the American Chemical Society*, **2012**, 134, 13749-54	16.4	19
47	Cluster assembly in nitrogenase. *Essays in Biochemistry*, **2017**, 61, 271-279	7.6	18
46	Widening the Product Profile of Carbon Dioxide Reduction by Vanadium Nitrogenase. *ChemBioChem*, **2015**, 16, 1993-6	3.8	18
45	Assembly scaffold NifEN: A structural and functional homolog of the nitrogenase catalytic component. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 9504-8	11.5	17
44	Spectroscopic Characterization of an Eight-Iron Nitrogenase Cofactor Precursor that Lacks the "9 Sulfur". *Angewandte Chemie - International Edition*, **2019**, 58, 14703-14707	16.4	17
43	Catalytic Reduction of CN□CO, and CO2 by Nitrogenase Cofactors in Lanthanide-Driven Reactions. *Angewandte Chemie*, **2015**, 127, 1235-1238	3.6	17
42	Cofactor specificity motifs and the induced fit mechanism in class I ketol-acid reductoisomerases. *Biochemical Journal*, **2015**, 468, 475-84	3.8	16
41	Insights into hydrocarbon formation by nitrogenase cofactor homologs. *MBio*, **2015**, 6,	7.8	16
40	A Comparative Analysis of the CO-Reducing Activities of MoFe Proteins Containing Mo- and V-Nitrogenase Cofactors. *ChemBioChem*, **2018**, 19, 649-653	3.8	15
39	ATP-Independent Formation of Hydrocarbons Catalyzed by Isolated Nitrogenase Cofactors. *Angewandte Chemie*, **2012**, 124, 1983-1985	3.6	15
38	Protocols for cofactor isolation of nitrogenase. *Methods in Molecular Biology*, **2011**, 766, 239-48	1.4	14
37	Characterization of an M-Cluster-Substituted Nitrogenase VFe Protein. *MBio*, **2018**, 9,	7.8	12
36	X-Ray Crystallographic Analysis of NifB with a Full Complement of Clusters: Structural Insights into the Radical SAM-Dependent Carbide Insertion During Nitrogenase Cofactor Assembly. *Angewandte Chemie - International Edition*, **2021**, 60, 2364-2370	16.4	12
35	Nonenzymatic synthesis of the P-cluster in the nitrogenase MoFe protein: evidence of the involvement of all-ferrous [Fe4S4](0) intermediates. *Biochemistry*, **2014**, 53, 1108-16	3.2	11
34	Insights into the Mechanism of Carbon Monoxide Dehydrogenase at Atomic Resolution. *Angewandte Chemie - International Edition*, **2015**, 54, 8337-9	16.4	11
33	[4Fe4S]2+ clusters exhibit ground-state paramagnetism. *Journal of the American Chemical Society*, **2011**, 133, 6871-3	16.4	11

32	Reduction and Condensation of Aldehydes by the Isolated Cofactor of Nitrogenase. *ACS Central Science*, **2018**, 4, 1430-1435	16.8	11
31	Spectroscopic Characterization of the Isolated Iron–Molybdenum Cofactor (FeMoco) Precursor from the Protein NifEN. *Angewandte Chemie*, **2011**, 123, 7933-7936	3.6	10
30	Structure and Reactivity of an Asymmetric Synthetic Mimic of Nitrogenase Cofactor. *Angewandte Chemie*, **2016**, 128, 15862-15865	3.6	10
29	Nitrogenases. *Methods in Molecular Biology*, **2019**, 1876, 3-24	1.4	10
28	Identity and function of an essential nitrogen ligand of the nitrogenase cofactor biosynthesis protein NifB. *Nature Communications*, **2020**, 11, 1757	17.4	10
27	A VTVH MCD and EPR Spectroscopic Study of the Maturation of the "Second" Nitrogenase P-Cluster. *Inorganic Chemistry*, **2018**, 57, 4719-4725	5.1	9
26	Combining a Nitrogenase Scaffold and a Synthetic Compound into an Artificial Enzyme. *Angewandte Chemie*, **2015**, 127, 14228-14231	3.6	9
25	Nitrogenase – eine Geschichte von Kohlenstoffatomen. *Angewandte Chemie*, **2016**, 128, 8356-8367	3.6	9
24	YedY: A Mononuclear Molybdenum Enzyme with a Redox-Active Ligand?. *ChemBioChem*, **2016**, 17, 453-5	3.8	8
23	Tracing the Hydrogen Source of Hydrocarbons Formed by Vanadium Nitrogenase. *Angewandte Chemie*, **2011**, 123, 5659-5661	3.6	7
22	Response to Comment on "Structural evidence for a dynamic metallocofactor during N reduction by Mo-nitrogenase". *Science*, **2021**, 371,	33.3	7
21	Nitrogenase Assembly: Strategies and Procedures. *Methods in Enzymology*, **2017**, 595, 261-302	1.7	6
20	Heterologous Expression and Engineering of the Nitrogenase Cofactor Biosynthesis Scaffold NifEN. *Angewandte Chemie - International Edition*, **2020**, 59, 6887-6893	16.4	6
19	Spectroscopic Characterization of an Eight-Iron Nitrogenase Cofactor Precursor that Lacks the 9th Sulfur. *Angewandte Chemie*, **2019**, 131, 14845-14849	3.6	6
18	Structural Analysis of a Nitrogenase Iron Protein from Methanosarcina acetivorans: Implications for CO Capture by a Surface-Exposed [FeS] Cluster. *MBio*, **2019**, 10,	7.8	5
17	A V-Nitrogenase Variant Containing a Citrate-Substituted Cofactor. *ChemBioChem*, **2020**, 21, 1742-1748	3.8	5
16	Electrochemical Characterization of Isolated Nitrogenase Cofactors from Azotobacter vinelandii. *ChemBioChem*, **2020**, 21, 1773-1778	3.8	5
15	Structures and Functions of the Active Sites of Nitrogenases **2014**, 199-224		4

14	Variable-temperature, variable-field magnetic circular dichroism spectroscopic study of NifEN-bound precursor and "FeMoco". *Journal of Biological Inorganic Chemistry*, **2011**, 16, 325-32	3.7	4
13	Electron Paramagnetic Resonance Spectroscopy of Metalloproteins. *Methods in Molecular Biology*, **2019**, 1876, 197-211	1.4	4
12	Purification of Nitrogenase Proteins. *Methods in Molecular Biology*, **2019**, 1876, 111-124	1.4	3
11	Structural and Mechanistic Insights into CO Activation by Nitrogenase Iron Protein. *Chemistry - A European Journal*, **2019**, 25, 13078-13082	4.8	2
10	Probing the All-Ferrous States of Methanogen Nitrogenase Iron Proteins. *Jacs Au*, **2021**, 1, 119-123		2
9	Electron Paramagnetic Resonance and Magnetic Circular Dichroism Spectra of the Nitrogenase M Cluster Precursor Suggest Sulfur Migration upon Oxidation: A Proposal for Substrate and Inhibitor Binding. *ChemBioChem*, **2020**, 21, 1767-1772	3.8	2
8	X-Ray Crystallographic Analysis of NifB with a Full Complement of Clusters: Structural Insights into the Radical SAM-Dependent Carbide Insertion During Nitrogenase Cofactor Assembly. *Angewandte Chemie*, **2021**, 133, 2394-2400	3.6	2
7	Characterization of a Mo-Nitrogenase Variant Containing a Citrate-Substituted Cofactor. *ChemBioChem*, **2021**, 22, 151-155	3.8	1
6	Tracing the incorporation of the "ninth sulfur" into the nitrogenase cofactor precursor with selenite and tellurite. *Nature Chemistry*, **2021**, 13, 1228-1234	17.6	0
5	Heterologous Expression and Engineering of the Nitrogenase Cofactor Biosynthesis Scaffold NifEN. *Angewandte Chemie*, **2020**, 132, 6954-6960	3.6	
4	Current Understanding of the Biosynthetic and Catalytic Mechanisms of Mo-Nitrogenase **2020**, 332-348		
3	An EPR and VTVH MCD spectroscopic investigation of the nitrogenase assembly protein NifB. *Journal of Biological Inorganic Chemistry*, **2021**, 26, 403-410	3.7	
2	Nitrogenase: Structure, Function and Mechanism **2021**, 634-658		
1	Radical SAM-dependent formation of a nitrogenase cofactor core on NifB.. *Journal of Inorganic Biochemistry*, **2022**, 233, 111837	4.2	