Dennis R Dean

List of Publications by Year
in descending order

113 papers	12,093 citations	18482 62 h-index	26613 107 g-index
115 all docs	115 docs citations	115 times ranked	5985 citing authors

#	Article	IF	Citations
1	Mechanism of Nitrogen Fixation by Nitrogenase: The Next Stage. Chemical Reviews, 2014, 114, 4041-4062.	47.7	1,379
2	Mechanism of Mo-Dependent Nitrogenase. Annual Review of Biochemistry, 2009, 78, 701-722.	11.1	561
3	IscU as a Scaffold for Ironâ'Sulfur Cluster Biosynthesis:Â Sequential Assembly of [2Fe-2S] and [4Fe-4S] Clusters in IscUâ€. Biochemistry, 2000, 39, 7856-7862.	2.5	419
4	Mechanism for the Desulfurization of L-Cysteine Catalyzed by the nifS Gene Product. Biochemistry, 1994, 33, 4714-4720.	2.5	382
5	Climbing Nitrogenase: Toward a Mechanism of Enzymatic Nitrogen Fixation. Accounts of Chemical Research, 2009, 42, 609-619.	15.6	336
6	Nitrogenase: A Draft Mechanism. Accounts of Chemical Research, 2013, 46, 587-595.	15.6	328
7	Biochemical and genetic analysis of the nifUSVWZM cluster from Azotobacter vinelandii. Molecular Genetics and Genomics, 1989, 219, 49-57.	2.4	279
8	Genome Sequence of<i>Azotobacter vinelandii</i>, an Obligate Aerobe Specialized To Support Diverse Anaerobic Metabolic Processes. Journal of Bacteriology, 2009, 191, 4534-4545.	2.2	265
9	Reduction of Substrates by Nitrogenases. Chemical Reviews, 2020, 120, 5082-5106.	47.7	234
10	IscA, an Alternate Scaffold for Feâˆ'S Cluster Biosynthesis. Biochemistry, 2001, 40, 14069-14080.	2.5	233
11	Formation of ironâ€"sulfur clusters in bacteria: an emerging field in bioinorganic chemistry. Current Opinion in Chemical Biology, 2003, 7, 166-173.	6.1	217
12	Substrate Interactions with the Nitrogenase Active Site. Accounts of Chemical Research, 2005, 38, 208-214.	15.6	199
13	Trapping H-Bound to the Nitrogenase FeMo-Cofactor Active Site during H2Evolution:Â Characterization by ENDOR Spectroscopy. Journal of the American Chemical Society, 2005, 127, 6231-6241.	13.7	196
14	Catalytic and Biophysical Properties of a Nitrogenase Apo-MoFe Protein Produced by anifB-Deletion Mutant ofAzotobactervinelandiiâ€. Biochemistry, 1998, 37, 12611-12623.	2.5	192
15	Nitrogenase bioelectrocatalysis: heterogeneous ammonia and hydrogen production by MoFe protein. Energy and Environmental Science, 2016, 9, 2550-2554.	30.8	187
16	Substrate Interactions with Nitrogenase:â€‰ Fe versus Mo. Biochemistry, 2004, 43, 1401-1409.	2.5	183
17	Sulfur Transfer from IscS to IscU:Â The First Step in Ironâˆ'Sulfur Cluster Biosynthesis. Journal of the American Chemical Society, 2001, 123, 11103-11104.	13.7	179
18	Role of the MoFe Protein .alpha.-Subunit Histidine-195 Residue in FeMo-cofactor Binding and Nitrogenase Catalysis. Biochemistry, 1995, 34, 2798-2808.	2.5	156

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19	nifU Gene Product from Azotobacter vinelandii Is a Homodimer That Contains Two Identical [2Fe-2S] Clusters. Biochemistry, 1994, 33, 13455-13463.	2.5	147
20	Nitrogen Fixation byAzotobacter vinelandiiStrains Having Deletions in Structural Genes for Nitrogenase. Science, 1986, 232, 92-94.	12.6	137
21	Substrate Interaction at an Iron-Sulfur Face of the FeMo-cofactor during Nitrogenase Catalysis. Journal of Biological Chemistry, 2004, 279, 53621-53624.	3.4	137
22	NifS-Mediated Assembly of [4Feâ˘4S] Clusters in the N- and C-Terminal Domains of the NifU Scaffold Protein. Biochemistry, 2005, 44, 12955-12969.	2.5	131
23	Breaking the N2 triple bond: insights into the nitrogenase mechanism. Dalton Transactions, 2006, , 2277.	3.3	131
24	Reductive Elimination of H₂ Activates Nitrogenase to Reduce the Nâ‰¡N Triple Bond: Characterization of the E₄(4H) Janus Intermediate in Wild-Type Enzyme. Journal of the American Chemical Society, 2016, 138, 10674-10683.	13.7	131
25	Role for the nitrogenase MoFe protein Î±-subunit in FeMo-cofactor binding and catalysis. Nature, 1990, 343, 188-190.	27.8	130
26	Iron-Sulfur Cluster Assembly. Journal of Biological Chemistry, 2004, 279, 19705-19711.	3.4	125
27	Intermediates Trapped during Nitrogenase Reduction of Nâ‹®N, CH3â˘NNH, and H2Nâ˘NH2. Journal of the American Chemical Society, 2005, 127, 14960-14961.	13.7	122
28	Role of the IscU Protein in Ironâ˘Sulfur Cluster Biosynthesis:Â IscS-mediated Assembly of a [Fe2S2] Cluster in IscU. Journal of the American Chemical Society, 2000, 122, 2136-2137.	13.7	121
29	The nifU, nifS and nifV gene products are required for activity of all three nitrogenases of Azotobacter vinelandii. Molecular Genetics and Genomics, 1992, 231, 494-498.	2.4	120
30	Role of Nucleotides in Nitrogenase Catalysis. Accounts of Chemical Research, 1997, 30, 260-266.	15.6	117
31	Electron Transfer within Nitrogenase: Evidence for a Deficit-Spending Mechanism. Biochemistry, 2011, 50, 9255-9263.	2.5	117
32	An Organometallic Intermediate during Alkyne Reduction by Nitrogenase. Journal of the American Chemical Society, 2004, 126, 9563-9569.	13.7	116
33	Connecting nitrogenase intermediates with the kinetic scheme for N2 reduction by a relaxation protocol and identification of the N2 binding state. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 1451-1455.	7.1	113
34	Diazene (HNNH) Is a Substrate for Nitrogenase:Â Insights into the Pathway of N2Reductionâ€. Biochemistry, 2007, 46, 6784-6794.	2.5	106
35	Electron transfer in nitrogenase catalysis. Current Opinion in Chemical Biology, 2012, 16, 19-25.	6.1	105
36	Carbon dioxide reduction to methane and coupling with acetylene to form propylene catalyzed by remodeled nitrogenase. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 19644-19648.	7.1	103

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37	In Vitro Activation of Apo-Aconitase Using a [4Fe-4S] Cluster-Loaded Form of the IscU [Feâˆ'S] Cluster Scaffolding Proteinâ€. Biochemistry, 2007, 46, 6812-6821.	2.5	101
38	Energy Transduction in Nitrogenase. Accounts of Chemical Research, 2018, 51, 2179-2186.	15.6	101
39	Transcriptional Profiling of Nitrogen Fixation in Azotobacter vinelandii. Journal of Bacteriology, 2011, 193, 4477-4486.	2.2	99
40	Molybdenum Nitrogenase Catalyzes the Reduction and Coupling of CO to Form Hydrocarbons*. Journal of Biological Chemistry, 2011, 286, 19417-19421.	3.4	99
41	Identification of a Key Catalytic Intermediate Demonstrates That Nitrogenase Is Activated by the Reversible Exchange of N₂ for H₂. Journal of the American Chemical Society, 2015, 137, 3610-3615.	13.7	99
42	Mo-, V-, and Fe-Nitrogenases Use a Universal Eight-Electron Reductive-Elimination Mechanism To Achieve N₂ Reduction. Biochemistry, 2019, 58, 3293-3301.	2.5	99
43	On reversible H ₂ loss upon N ₂ binding to FeMo-cofactor of nitrogenase. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 16327-16332.	7.1	98
44	Trapping a Hydrazine Reduction Intermediate on the Nitrogenase Active Site. Biochemistry, 2005, 44, 8030-8037.	2.5	96
45	Evidence That the P_i Release Event Is the Rate-Limiting Step in the Nitrogenase Catalytic Cycle. Biochemistry, 2016, 55, 3625-3635.	2.5	95
46	Localization of a Substrate Binding Site on the FeMo-Cofactor in Nitrogenase:Â Trapping Propargyl Alcohol with an Î±-70-Substituted MoFe Proteinâ€. Biochemistry, 2003, 42, 9102-9109.	2.5	93
47	Nitrogenase reduction of carbon-containing compounds. Biochimica Et Biophysica Acta - Bioenergetics, 2013, 1827, 1102-1111.	1.0	91
48	Testing if the Interstitial Atom, X, of the Nitrogenase Molybdenumâˆ'Iron Cofactor Is N or C:â€‰ ENDOR, ESEEM, and DFT Studies of the <i>S</i> = ³/₂ Resting State in Multiple Environments. Inorganic Chemistry, 2007, 46, 11437-11449.	4.0	89
49	A methyldiazene (HNNCH3)-derived species bound to the nitrogenase active-site FeMo cofactor: Implications for mechanism. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 17113-17118.	7.1	84
50	ENDOR/HYSCORE Studies of the Common Intermediate Trapped during Nitrogenase Reduction of N₂H₂, CH₃N₂H, and N₂H₄Support an Alternating Reaction Pathway for N₂Reduction. Journal of the American Chemical Society, 2011, 133, 11655-11664.	13.7	83
51	Keeping the nitrogen-fixation dream alive. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 3009-3011.	7.1	82
52	The Azotobacter vinelandii NifEN Complex Contains Two Identical [4Fe-4S] Clusters. Biochemistry, 1998, 37, 10420-10428.	2.5	80
53	Mechanism of N₂ Reduction Catalyzed by Fe-Nitrogenase Involves Reductive Elimination of H₂. Biochemistry, 2018, 57, 701-710.	2.5	80
54	Is Mo Involved in Hydride Binding by the Four-Electron Reduced (E₄) Intermediate of the Nitrogenase MoFe Protein?. Journal of the American Chemical Society, 2010, 132, 2526-2527.	13.7	79

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55	Mechanistic Features and Structure of the Nitrogenase Î±-Gln195MoFe Proteinâ€,â€¡. Biochemistry, 2001, 40, 1540-1549.	2.5	77
56	Controlled Expression of nif and isc Iron-Sulfur Protein Maturation Components Reveals Target Specificity and Limited Functional Replacement between the Two Systems. Journal of Bacteriology, 2007, 189, 2854-2862.	2.2	76
57	⁵⁷Fe ENDOR Spectroscopy and â€˜Electron Inventoryâ€™ Analysis of the Nitrogenase E₄Intermediate Suggest the Metal-Ion Core of FeMo-Cofactor Cycles Through Only One Redox Couple. Journal of the American Chemical Society, 2011, 133, 17329-17340.	13.7	75
58	Light-driven carbon dioxide reduction to methane by nitrogenase in a photosynthetic bacterium. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 10163-10167.	7.1	74
59	Evidence for Coupled Electron and Proton Transfer in the [8Fe-7S] Cluster of Nitrogenaseâ€. Biochemistry, 1998, 37, 11376-11384.	2.5	73
60	Involvement of the P Cluster in Intramolecular Electron Transfer within the Nitrogenase MoFe Protein. Journal of Biological Chemistry, 1995, 270, 27007-27013.	3.4	70
61	Characterization of the Î³ Protein and Its Involvement in the Metallocluster Assembly and Maturation of Dinitrogenase from Azotobacter vinelandii. Journal of Biological Chemistry, 1995, 270, 24745-24752.	3.4	70
62	Isolation and Characterization of an Acetylene-resistant Nitrogenase. Journal of Biological Chemistry, 2000, 275, 11459-11464.	3.4	69
63	Trapping an Intermediate of Dinitrogen (N₂) Reduction on Nitrogenase. Biochemistry, 2009, 48, 9094-9102.	2.5	66
64	Electron Inventory, Kinetic Assignment (En), Structure, and Bonding of Nitrogenase Turnover Intermediates with C2H2and CO. Journal of the American Chemical Society, 2005, 127, 15880-15890.	13.7	65
65	Localization of a Catalytic Intermediate Bound to the FeMo-cofactor of Nitrogenase. Journal of Biological Chemistry, 2004, 279, 34770-34775.	3.4	63
66	NifX and NifEN exchange NifB cofactor and the VK-cluster, a newly isolated intermediate of the iron-molybdenum cofactor biosynthetic pathway. Molecular Microbiology, 2007, 63, 177-192.	2.5	63
67	Evidence for Multiple Substrate-Reduction Sites and Distinct Inhibitor-Binding Sites from an AlteredAzotobacter vinelandiiNitrogenase MoFe Proteinâ€. Biochemistry, 1997, 36, 4884-4894.	2.5	60
68	Reversible Photoinduced Reductive Elimination of H₂ from the Nitrogenase Dihydride State, the E₄(4H) Janus Intermediate. Journal of the American Chemical Society, 2016, 138, 1320-1327.	13.7	60
69	Unification of reaction pathway and kinetic scheme for N ₂ reduction catalyzed by nitrogenase. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 5583-5587.	7.1	59
70	Competitive Substrate and Inhibitor Interactions at the Physiologically Relevant Active Site of Nitrogenase. Journal of Biological Chemistry, 2000, 275, 36104-36107.	3.4	58
71	Biogenesis of Molybdenum Cofactors. Critical Reviews in Microbiology, 1990, 17, 169-188.	6.1	56
72	Mechanism of Nitrogenase H₂ Formation by Metal-Hydride Protonation Probed by Mediated Electrocatalysis and H/D Isotope Effects. Journal of the American Chemical Society, 2017, 139, 13518-13524.	13.7	51

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73	Characterization of an Intermediate in the Reduction of Acetylene by the Nitrogenase Î±-Gln195MoFe Protein by Q-band EPR and13C,1H ENDOR. Journal of the American Chemical Society, 2000, 122, 5582-5587.	13.7	50
74	Alkyne substrate interaction within the nitrogenase MoFe protein. Journal of Inorganic Biochemistry, 2007, 101, 1642-1648.	3.5	50
75	EXAFS and NRVS Reveal a Conformational Distortion of the FeMo-cofactor in the MoFe Nitrogenase Propargyl Alcohol Complex. Journal of Inorganic Biochemistry, 2012, 112, 85-92.	3.5	50
76	CO₂ Reduction Catalyzed by Nitrogenase: Pathways to Formate, Carbon Monoxide, and Methane. Inorganic Chemistry, 2016, 55, 8321-8330.	4.0	47
77	Interaction of Acetylene and Cyanide with the Resting State of Nitrogenase Î±-96-Substituted MoFe Proteins. Biochemistry, 2001, 40, 13816-13825.	2.5	45
78	Kinetic Understanding of N₂ Reduction versus H₂ Evolution at the E₄(4H) Janus State in the Three Nitrogenases. Biochemistry, 2018, 57, 5706-5714.	2.5	44
79	Reduction of short chain alkynes by a nitrogenase Î±-70Ala-substituted MoFe proteinBased on the presentation given at Dalton Discussion No. 4, 10â€“13th January 2002, Kloster Banz, Germany.ÂResearch supported by National Institutes of Health Grant R01-GM59087.. Dalton Transactions RSC, 2002, , 802-807.	2.3	43
80	Negative cooperativity in the nitrogenase Fe protein electron delivery cycle. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E5783-E5791.	7.1	42
81	Photoinduced Reductive Elimination of H₂ from the Nitrogenase Dihydride (Janus) State Involves a FeMo-cofactor-H₂ Intermediate. Inorganic Chemistry, 2017, 56, 2233-2240.	4.0	42
82	Electrocatalytic CO2 reduction catalyzed by nitrogenase MoFe and FeFe proteins. Bioelectrochemistry, 2018, 120, 104-109.	4.6	41
83	A Confirmation of the Quench-Cryoannealing Relaxation Protocol for Identifying Reduction States of Freeze-Trapped Nitrogenase Intermediates. Inorganic Chemistry, 2014, 53, 3688-3693.	4.0	40
84	Fe Protein-Independent Substrate Reduction by Nitrogenase MoFe Protein Variants. Biochemistry, 2015, 54, 2456-2462.	2.5	38
85	A substrate channel in the nitrogenase MoFe protein. Journal of Biological Inorganic Chemistry, 2009, 14, 1015-1022.	2.6	36
86	Biosynthesis of the nitrogenase active-site cofactor precursor NifB-co in <i>Saccharomyces cerevisiae</i>. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 25078-25086.	7.1	36
87	Stereospecificity of Acetylene Reduction Catalyzed by Nitrogenase. Journal of the American Chemical Society, 2001, 123, 1822-1827.	13.7	35
88	Sequential and differential interaction of assembly factors during nitrogenase MoFe protein maturation. Journal of Biological Chemistry, 2018, 293, 9812-9823.	3.4	34
89	Nitrite and Hydroxylamine as Nitrogenase Substrates: Mechanistic Implications for the Pathway of N2 Reduction. Journal of the American Chemical Society, 2014, 136, 12776-12783.	13.7	33
90	Electron Redistribution within the Nitrogenase Active Site FeMo-Cofactor During Reductive Elimination of H₂ to Achieve Nâ‰¡N Triple-Bond Activation. Journal of the American Chemical Society, 2020, 142, 21679-21690.	13.7	32

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91	Hydride Conformers of the Nitrogenase FeMo-cofactor Two-Electron Reduced State E₂(2H), Assigned Using Cryogenic Intra Electron Paramagnetic Resonance Cavity Photolysis. Inorganic Chemistry, 2018, 57, 6847-6852.	4.0	29
92	Comment on â€œStructural evidence for a dynamic metallocofactor during N ₂ reduction by Mo-nitrogenaseâ€ Science, 2021, 371, .	12.6	29
93	Detection of a New Radical and FeMo-Cofactor EPR Signal during Acetylene Reduction by the Î±-H195Q Mutant of Nitrogenase. Journal of the American Chemical Society, 1999, 121, 9457-9458.	13.7	28
94	The NifZ accessory protein has an equivalent function in maturation of both nitrogenase MoFe protein P-clusters. Journal of Biological Chemistry, 2019, 294, 6204-6213.	3.4	26
95	VnfY Is Required for Full Activity of the Vanadium-Containing Dinitrogenase in Azotobacter vinelandii. Journal of Bacteriology, 2003, 185, 2383-2386.	2.2	25
96	Steric Control of the Hiâ€CO MoFe Nitrogenase Complex Revealed by Stoppedâ€Flow Infrared Spectroscopy. Angewandte Chemie - International Edition, 2011, 50, 272-275.	13.8	25
97	Coâ€ordination and fineâ€tuning of nitrogen fixation in <i>Azotobacter vinelandii</i>. Molecular Microbiology, 2011, 79, 1132-1135.	2.5	21
98	CO as a substrate and inhibitor of H+ reduction for the Mo-, V-, and Fe-nitrogenase isozymes. Journal of Inorganic Biochemistry, 2020, 213, 111278.	3.5	18
99	Specificity of NifEN and VnfEN for the Assembly of Nitrogenase Active Site Cofactors in Azotobacter vinelandii. MBio, 2021, 12, e0156821.	4.1	18
100	The electronic structure of FeV-cofactor in vanadium-dependent nitrogenase. Chemical Science, 2021, 12, 6913-6922.	7.4	17
101	Exploring Electron/Proton Transfer and Conformational Changes in the Nitrogenase MoFe Protein and FeMoâ€cofactor Through Cryoreduction/EPR Measurements. Israel Journal of Chemistry, 2016, 56, 841-851.	2.3	13
102	Application of affinity purification methods for analysis of the nitrogenase system from Azotobacter vinelandii. Methods in Enzymology, 2018, 613, 231-255.	1.0	13
103	Exploring the Role of the Central Carbide of the Nitrogenase Active-Site FeMo-cofactor through Targeted ¹³C Labeling and ENDOR Spectroscopy. Journal of the American Chemical Society, 2021, 143, 9183-9190.	13.7	13
104	Nitrogenase iron-molybdenum cofactor binding site: Protein conformational changes associated with cofactor binding. Tetrahedron, 1997, 53, 11971-11984.	1.9	12
105	Temperature Invariance of the Nitrogenase Electron Transfer Mechanism. Biochemistry, 2012, 51, 8391-8398.	2.5	12
106	Time-Resolved EPR Study of H₂ Reductive Elimination from the Photoexcited Nitrogenase Janus E₄(4H) Intermediate. Journal of Physical Chemistry B, 2019, 123, 8823-8828.	2.6	12
107	The One-Electron Reduced Active-Site FeFe-Cofactor of Fe-Nitrogenase Contains a Hydride Bound to a Formally Oxidized Metal-Ion Core. Inorganic Chemistry, 2022, 61, 5459-5464.	4.0	12
108	Construction and Characterization of a Heterodimeric Iron Protein:Â Defining Roles for Adenosine Triphosphate in Nitrogenase Catalysisâ€. Biochemistry, 2000, 39, 7221-7228.	2.5	10

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109	Role of the Ironâ€"Molybdenum Cofactor Polypeptide Environment in Azotobacter vinelandii Molybdenumâ€"Nitrogenase Catalysis. ACS Symposium Series, 1993, , 216-230.	0.5	8
110	Q-Band ENDOR Studies of the Nitrogenase MoFe Protein under Turnover Conditions. ACS Symposium Series, 2003, , 150-178.	0.5	7
111	A conformational role for NifW in the maturation of molybdenum nitrogenase P-cluster. Chemical Science, 2022, 13, 3489-3500.	7.4	7
112	<scp>AnfO</scp> controls fidelity of nitrogenase <scp>FeFe</scp> protein maturation by preventing misincorporation of <scp>FeV</scp>â€cofactor. Molecular Microbiology, 2022, 117, 1080-1088.	2.5	6
113	Trading Placesâ€"Switching Frataxin Function by a Single Amino Acid Substitution within the [Fe-S] Cluster Assembly Scaffold. PLoS Genetics, 2015, 11, e1005192.	3.5	2