

David B Layzell

List of Publications by Year in descending order

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88
papers

4,406
citations

70961

41
h-index

110170

64
g-index

89
all docs

89
docs citations

89
times ranked

2725
citing authors

#	ARTICLE	IF	CITATIONS
1	Break crop benefits in temperate wheat production. <i>Field Crops Research</i> , 2008, 107, 185-195.	2.3	404
2	Economy of Carbon and Nitrogen in a Nodulated and Nonnodulated (NO ₃ -grown) Legume. <i>Plant Physiology</i> , 1979, 64, 1083-1088.	2.3	161
3	Modeling the Transport and Utilization of Carbon and Nitrogen in a Nodulated Legume. <i>Plant Physiology</i> , 1979, 63, 730-737.	2.3	148
4	Partitioning of Carbon and Nitrogen and the Nutrition of Root and Shoot Apex in a Nodulated Legume. <i>Plant Physiology</i> , 1981, 67, 30-36.	2.3	148
5	Glutamine synthetase genes are regulated by ammonia provided externally or by symbiotic nitrogen fixation. <i>EMBO Journal</i> , 1987, 6, 1167-1171.	3.5	126
6	Carbohydrate Supply and N ₂ Fixation in Soybean. <i>Plant Physiology</i> , 1987, 85, 137-144.	2.3	121
7	Oxygen limitation of N ₂ fixation in stem-girdled and nitrate-treated soybean. <i>Physiologia Plantarum</i> , 1988, 73, 113-121.	2.6	121
8	Phloem Glutamine and the Regulation of O ₂ Diffusion in Legume Nodules. <i>Plant Physiology</i> , 1997, 113, 259-267.	2.3	119
9	Steady and Nonsteady State Gas Exchange Characteristics of Soybean Nodules in Relation to the Oxygen Diffusion Barrier. <i>Plant Physiology</i> , 1987, 84, 164-172.	2.3	117
10	Economy of Photosynthate Use in Nitrogen-fixing Legume Nodules. <i>Plant Physiology</i> , 1979, 64, 888-891.	2.3	106
11	Mechanism of Nitrogenase Inhibition in Soybean Nodules. <i>Plant Physiology</i> , 1990, 92, 1101-1107.	2.3	96
12	Transport of Organic Solutes in Phloem and Xylem of a Nodulated Legume. <i>Plant Physiology</i> , 1979, 63, 1082-1088.	2.3	94
13	Isolation and characterization of hydrogen-oxidizing bacteria induced following exposure of soil to hydrogen gas and their impact on plant growth. <i>Environmental Microbiology</i> , 2007, 9, 435-444.	1.8	92
14	Removal and biodegradation of naphthenic acids by biochar and attached environmental biofilms in the presence of co-contaminating metals. <i>Bioresource Technology</i> , 2016, 216, 352-361.	4.8	90
15	Modeling C and N Transport to Developing Soybean Fruits. <i>Plant Physiology</i> , 1982, 70, 1290-1298.	2.3	89
16	Soil biogeochemistry during the early spring in low arctic mesic tundra and the impacts of deepened snow and enhanced nitrogen availability. <i>Biogeochemistry</i> , 2010, 99, 127-141.	1.7	86
17	Hydrogen fertilization of soils - is this a benefit of legumes in rotation?. <i>Plant, Cell and Environment</i> , 2003, 26, 1875-1879.	2.8	85
18	Oxygen and the regulation of nitrogen fixation in legume nodules. <i>Physiologia Plantarum</i> , 1990, 80, 322-327.	2.6	80

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19	The Role of Dark Carbon Dioxide Fixation in Root Nodules of Soybean. <i>Plant Physiology</i> , 1986, 81, 200-205.	2.3	78
20	Model of gas exchange and diffusion in legume nodules. <i>Planta</i> , 1988, 173, 128-141.	1.6	78
21	H ₂ oxidation, O ₂ uptake and CO ₂ fixation in hydrogen treated soils. <i>Plant and Soil</i> , 2001, 229, 1-12.	1.8	78
22	Regulation of O ₂ Concentration in Soybean Nodules Observed by <i>in Situ</i> Spectroscopic Measurement of Leghemoglobin Oxygenation. <i>Plant Physiology</i> , 1988, 87, 296-299.	2.3	77
23	Gaba shunt in developing soybean seeds is associated with hypoxia. <i>Physiologia Plantarum</i> , 1995, 94, 219-228.	2.6	77
24	Carbon and Nitrogen Assimilation and Partitioning in Soybeans Exposed to Low Root Temperatures. <i>Plant Physiology</i> , 1986, 80, 249-255.	2.3	71
25	Nitrogenase Activity, Nodule Respiration, and O ₂ Permeability Following Detopping of Alfalfa and Birdsfoot Trefoil. <i>Plant Physiology</i> , 1992, 98, 894-900.	2.3	71
26	Can a limitation in phloem supply to nodules account for the inhibitory effect of nitrate on nitrogenase activity in soybean?. <i>Physiologia Plantarum</i> , 1988, 74, 137-146.	2.6	70
27	Assimilation and Transport of Nitrogen in Nonnodulated (NO ₃ -grown) <i>Lupinus albus</i> L. <i>Plant Physiology</i> , 1979, 64, 1078-1082.	2.3	68
28	Effects of Gradual Increases in O ₂ Concentration on Nodule Activity in Soybean. <i>Plant Physiology</i> , 1989, 91, 315-321.	2.3	64
29	Gaba shunt in developing soybean seeds is associated with hypoxia. <i>Physiologia Plantarum</i> , 1995, 94, 219-228.	2.6	61
30	Effect of Increases in Oxygen Concentration during the Argon-Induced Decline in Nitrogenase Activity in Root Nodules of Soybean. <i>Plant Physiology</i> , 1991, 96, 376-381.	2.3	55
31	Measurement of Legume Nodule Respiration and O ₂ Permeability by Noninvasive Spectrophotometry of Leghemoglobin. <i>Plant Physiology</i> , 1991, 96, 137-143.	2.3	54
32	Regulation of Assimilate Partitioning in Soybean. <i>Plant Physiology</i> , 1987, 83, 341-348.	2.3	53
33	Synthesis, Storage, and Utilization of Amino Compounds in White Lupin (<i>Lupinus albus</i> L.). <i>Plant Physiology</i> , 1981, 67, 37-42.	2.3	51
34	Oxygen Regulation of a Nodule-Located Carbonic Anhydrase in Alfalfa. <i>Plant Physiology</i> , 2000, 124, 1059-1068.	2.3	51
35	Understanding energy systems change in Canada: 1. Decomposition of total energy intensity. <i>Energy Economics</i> , 2016, 56, 101-106.	5.6	51
36	Efficiency and regulation of root respiration in a legume: Effects of the N source. <i>Physiologia Plantarum</i> , 1980, 50, 319-325.	2.6	49

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37	A Highly Sensitive, Flow Through H ₂ Gas Analyzer for Use in Nitrogen Fixation Studies. <i>Plant Physiology</i> , 1984, 75, 582-585.	2.3	48
38	Evidence for Light-Stimulated Fatty Acid Synthesis in Soybean Fruit ¹ . <i>Plant Physiology</i> , 1999, 120, 1117-1128.	2.3	48
39	Leaf O ₂ uptake in the dark is independent of coincident CO ₂ partial pressure. <i>Journal of Experimental Botany</i> , 2001, 52, 2235-2238.	2.4	45
40	Model of gas exchange and diffusion in legume nodules. <i>Planta</i> , 1988, 173, 117-127.	1.6	44
41	Modeling the C Economy of <i>Anabaena flos-aquae</i> . <i>Plant Physiology</i> , 1985, 78, 746-752.	2.3	42
42	Pyrolysis of wood to biochar: Increasing yield while maintaining microporosity. <i>Bioresource Technology</i> , 2014, 153, 173-179.	4.8	41
43	Effects of N ₂ Deficiency on Transport and Partitioning of C and N in a Nodulated Legume. <i>Plant Physiology</i> , 1984, 76, 59-64.	2.3	39
44	The Site of Oxygen Limitation in Soybean Nodules ¹ . <i>Plant Physiology</i> , 1999, 119, 399-408.	2.3	37
45	Whole-Plant Gas Exchange and Reductive Biosynthesis in White Lupin. <i>Plant Physiology</i> , 2001, 126, 1555-1565.	2.3	37
46	Adenylate-Coupled Ion Movement. A Mechanism for the Control of Nodule Permeability to O ₂ Diffusion. <i>Plant Physiology</i> , 2006, 141, 280-287.	2.3	33
47	Enhancing biochar yield by co-pyrolysis of bio-oil with biomass: Impacts of potassium hydroxide addition and air pretreatment prior to co-pyrolysis. <i>Bioresource Technology</i> , 2014, 171, 88-94.	4.8	32
48	Adsorption of naphthenic acids on high surface area activated carbons. <i>Journal of Environmental Science and Health - Part A Toxic/Hazardous Substances and Environmental Engineering</i> , 2014, 49, 913-922.	0.9	32
49	Energetics and Biological Costs of Nitrogen Assimilation. , 1990, , 1-42.		30
50	Effect of N Source on the Steady State Growth and N Assimilation of P-limited <i>Anabaena flos-aquae</i> . <i>Plant Physiology</i> , 1985, 78, 739-745.	2.3	27
51	Ammonia Production and Assimilation in Glutamate Synthase Mutants of <i>Arabidopsis thaliana</i> . <i>Plant Physiology</i> , 1988, 87, 148-154.	2.3	24
52	Effects of Oxygen on Nodule Physiology and Expression of Nodulins in Alfalfa ¹ . <i>Plant Physiology</i> , 1998, 117, 385-395.	2.3	24
53	Carbon and Nitrogen Partitioning in the Whole Plant " A Thesis Based on Empirical Modeling. , 1981, , 94-134.		24
54	Production of Bio-Synthetic Natural Gas in Canada. <i>Environmental Science & Technology</i> , 2010, 44, 2183-2188.	4.6	23

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55	O ₂ regulation and O ₂ -limitation of nitrogenase activity in root nodules of pea and lupin. <i>Physiologia Plantarum</i> , 1992, 86, 269-278.	2.6	21
56	A morphometric study of effective nodules induced by <i>Rhizobium loti</i> and <i>Bradyrhizobium</i> sp. (<i>Lotus</i>) on <i>Lotus pedunculatus</i> . <i>Canadian Journal of Botany</i> , 1985, 63, 43-53.	1.2	20
57	Gaseous diffusive properties of soybean nodules cultured with non-ambient pO ₂ . <i>Physiologia Plantarum</i> , 1993, 87, 89-95.	2.6	19
58	Photorespiratory Ammonia Does Not Inhibit Photosynthesis in Glutamate Synthase Mutants of <i>Arabidopsis</i> . <i>Plant Physiology</i> , 1989, 89, 498-500.	2.3	18
59	Dimensions and distribution of intercellular spaces in cryo-planed soybean nodules. <i>Physiologia Plantarum</i> , 1993, 89, 252-261.	2.6	17
60	Gaseous diffusive properties of soybean nodules cultured with non-ambient pO ₂ . <i>Physiologia Plantarum</i> , 1993, 87, 89-95.	2.6	15
61	The relationship between nodule adenylates and the regulation of nitrogenase activity by O ₂ in soybean. <i>Physiologia Plantarum</i> , 1994, 91, 687-695.	2.6	15
62	Role of oxygen limitation and nitrate metabolism in the nitrate inhibition of nitrogen fixation by pea. <i>Physiologia Plantarum</i> , 1997, 101, 45-50.	2.6	15
63	A metabolic connection between nitrogenase activity and the synthesis of ureides in nodulated soybean. <i>Physiologia Plantarum</i> , 1992, 84, 441-447.	2.6	14
64	In Vivo Gas Exchange Measurement of the Site and Dynamics of Nitrate Reduction in Soybean. <i>Plant Physiology</i> , 2003, 131, 1147-1156.	2.3	14
65	Feasibility study of a Great Lakes bioenergy system. <i>Bioresource Technology</i> , 2011, 102, 1087-1094.	4.8	14
66	The relationship between nodule adenylates and the regulation of nitrogenase activity by O ₂ in soybean. <i>Physiologia Plantarum</i> , 1994, 91, 687-695.	2.6	13
67	Reconciling energy efficiency and energy intensity metrics: an integrated decomposition analysis. <i>Energy Efficiency</i> , 2018, 11, 1999-2016.	1.3	13
68	Evidence that short-term regulation of nodule permeability does not occur in the inner cortex. <i>Physiologia Plantarum</i> , 1994, 91, 477-487.	2.6	12
69	Modelling electric vehicle charging network capacity and performance during short-notice evacuations. <i>International Journal of Disaster Risk Reduction</i> , 2021, 56, 102093.	1.8	11
70	A Simplified Approach for Modeling Diffusion into Cells. <i>Journal of Theoretical Biology</i> , 2000, 204, 47-65.	0.8	10
71	Nitrogen fixation, hydrogen production and N ₂ O emissions. <i>Canadian Journal of Plant Science</i> , 2014, 94, 1037-1041.	0.3	10
72	EnergyViz: an interactive system for visualization of energy systems. <i>Visual Computer</i> , 2016, 32, 403-413.	2.5	10

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73	Oxygen and the regulation of nitrogen fixation in legume nodules. <i>Physiologia Plantarum</i> , 1990, 80, 322-327.	2.6	9
74	Dimensions and distribution of intercellular spaces in cryo-planned soybean nodules. <i>Physiologia Plantarum</i> , 1993, 89, 252-261.	2.6	8
75	Evidence that short-term regulation of nodule permeability does not occur in the inner cortex. <i>Physiologia Plantarum</i> , 1994, 91, 477-487.	2.6	8
76	Adenylate Gradients and Ar:O ₂ Effects on Legume Nodules: I. Mathematical Models. <i>Plant Physiology</i> , 2004, 134, 801-812.	2.3	7
77	Early atmospheric detection of carbon dioxide from carbon capture and storage sites. <i>Journal of the Air and Waste Management Association</i> , 2016, 66, 739-747.	0.9	7
78	Inexpensive, Computer-Automated HPLC for Ion Exchange Separation and Quantification of Amino Acids in Physiological Fluids. <i>Journal of Liquid Chromatography and Related Technologies</i> , 1986, 9, 2199-2221.	0.9	5
79	Can genotypes of soybean (<i>Glycine max</i>) selected for nitrate tolerance provide good "models" for studying the mechanism of nitrate inhibition of nitrogenase activity?. <i>Physiologia Plantarum</i> , 1996, 98, 653-660.	2.6	5
80	Adenylate Gradients and Ar:O ₂ Effects on Legume Nodules. II. Changes in the Subcellular Adenylate Pools. <i>Plant Physiology</i> , 2004, 134, 1775-1783.	2.3	5
81	Using activated biochar for greenhouse gas mitigation and industrial water treatment. <i>Mitigation and Adaptation Strategies for Global Change</i> , 2016, 21, 761-777.	1.0	5
82	Interactive Visualization of Energy System. , 2014, , .		3
83	A metabolic connection between nitrogenase activity and the synthesis of ureides in nodulated soybean. <i>Physiologia Plantarum</i> , 1992, 84, 441-447.	2.6	3
84	Photoperiod and floral-bud development in <i>Caryopteris Æ— clandonensis</i> . <i>Canadian Journal of Botany</i> , 1978, 56, 1844-1851.	1.2	1
85	Dinitrogen Fixation. <i>Assa, Cssa and Sssa</i> , 2015, , 311-335.	0.6	1
86	Oxygen Regulation and Adenylates in Legume Nodules. , 2000, , 367-368.		1
87	Plant biology and food science in Canada: a vision for the future. <i>Canadian Journal of Botany</i> , 1998, 76, 355-364.	1.2	0
88	Poster Summaries. <i>Current Plant Science and Biotechnology in Agriculture</i> , 2005, , 225-250.	0.0	0