Tracy Lawson

List of Publications by Year
in descending order

137	12,315	25034	29157
papers	citations	57 h-index	104 g-index

143	143	143	11991
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Chlorophyll fluorescence analysis: a guide to good practice and understanding some new applications. Journal of Experimental Botany, 2013, 64, 3983-3998.	4.8	1,452
2	Stomatal Size, Speed, and Responsiveness Impact on Photosynthesis and Water Use Efficiency Â. Plant Physiology, 2014, 164, 1556-1570.	4.8	753
3	Pan genome of the phytoplankton Emiliania underpins its global distribution. Nature, 2013, 499, 209-213.	27.8	448
4	Increased Sedoheptulose-1,7-Bisphosphatase Activity in Transgenic Tobacco Plants Stimulates Photosynthesis and Growth from an Early Stage in Development. Plant Physiology, 2005, 138, 451-460.	4.8	375
5	Effects of kinetics of lightâ€induced stomatal responses on photosynthesis and waterâ€use efficiency. New Phytologist, 2016, 211, 1209-1220.	7.3	325
6	Speedy stomata, photosynthesis and plant water use efficiency. New Phytologist, 2019, 221, 93-98.	7.3	308
7	Guard cell photosynthesis and stomatal function. New Phytologist, 2009, 181, 13-34.	7.3	245
8	The High Light Response inArabidopsisInvolves ABA Signaling between Vascular and Bundle Sheath Cells. Plant Cell, 2009, 21, 2143-2162.	6.6	240
9	Natural variation in photosynthetic capacity, growth, and yield in 64 field-grown wheat genotypes. Journal of Experimental Botany, 2014, 65, 4959-4973.	4.8	226
10	Chloroplasts play a central role in plant defence and are targeted by pathogen effectors. Nature Plants, 2015, 1, 15074.	9.3	226
11	Importance of Fluctuations in Light on Plant Photosynthetic Acclimation. Plant Physiology, 2017, 173, 2163-2179.	4.8	218
12	Improving yield by exploiting mechanisms underlying natural variation of photosynthesis. Current Opinion in Biotechnology, 2012, 23, 215-220.	6.6	217
13	Multigene manipulation of photosynthetic carbon assimilation increases CO2 fixation and biomass yield in tobacco. Journal of Experimental Botany, 2015, 66, 4075-4090.	4.8	197
14	Increased SBPase activity improves photosynthesis and grain yield in wheat grown in greenhouse conditions. Philosophical Transactions of the Royal Society B: Biological Sciences, 2017, 372, 20160384.	4.0	193
15	Guard Cell Metabolism and Stomatal Function. Annual Review of Plant Biology, 2020, 71, 273-302.	18.7	189
16	The effect of increasing temperature on crop photosynthesis: from enzymes to ecosystems. Journal of Experimental Botany, 2021, 72, 2822-2844.	4.8	182
17	Mesophyll photosynthesis and guard cell metabolism impacts on stomatal behaviour. New Phytologist, 2014, 203, 1064-1081.	7.3	165
18	Simultaneous stimulation of sedoheptulose 1,7â€bisphosphatase, fructose 1,6â€bisphophate aldolase and the photorespiratory glycine decarboxylaseâ€H protein increases <scp>CO</scp>₂ assimilation, vegetative biomass and seed yield in Arabidopsis. Plant Biotechnology Journal, 2017, 15, 805-816.	8.3	162

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19	Blue Light Induces a Distinct Starch Degradation Pathway in Guard Cells for Stomatal Opening. Current Biology, 2016, 26, 362-370.	3.9	155
20	Using modern plant trait relationships between observed and theoretical maximum stomatal conductance and vein density to examine patterns of plant macroevolution. New Phytologist, 2016, 209, 94-103.	7.3	153
21	Phenotyping of field-grown wheat in the UK highlights contribution of light response of photosynthesis and flag leaf longevity to grain yield. Journal of Experimental Botany, 2017, 68, 3473-3486.	4.8	153
22	Stomatal conductance does not correlate with photosynthetic capacity in transgenic tobacco with reduced amounts of Rubisco. Journal of Experimental Botany, 2004, 55, 1157-1166.	4.8	145
23	Direct estimation of functional PSII reaction center concentration and PSII electron flux on a volume basis: a new approach to the analysis of Fast Repetition Rate fluorometry (FRRf) data. Limnology and Oceanography: Methods, 2012, 10, 142-154.	2.0	143
24	Arabidopsis HEAT SHOCK TRANSCRIPTION FACTORA1b overexpression enhances water productivity, resistance to drought, and infection. Journal of Experimental Botany, 2013, 64, 3467-3481.	4.8	137
25	Overexpression of the RieskeFeS Protein Increases Electron Transport Rates and Biomass Yield. Plant Physiology, 2017, 175, 134-145.	4.8	135
26	Microcystin-LR inhibits photosynthesis of Phaseolus vulgaris primary leaves: implications for current spray irrigation practice. New Phytologist, 1996, 133, 651-658.	7.3	124
27	Exploiting natural variation and genetic manipulation of stomatal conductance for crop improvement. Current Opinion in Plant Biology, 2019, 49, 1-7.	7.1	123
28	Engineered silver nanoparticles are sensed at the plasma membrane and dramatically modify the physiology of Arabidopsis thaliana plants. Plant Journal, 2016, 85, 245-257.	5.7	119
29	Temporal Dynamics of Stomatal Behavior: Modeling and Implications for Photosynthesis and Water Use. Plant Physiology, 2017, 174, 603-613.	4.8	118
30	Role of blue and red light in stomatal dynamic behaviour. Journal of Experimental Botany, 2020, 71, 2253-2269.	4.8	113
31	The responses of guard and mesophyll cell photosynthesis to CO2, O2, light, and water stress in a range of species are similar. Journal of Experimental Botany, 2003, 54, 1743-1752.	4.8	112
32	Rethinking Guard Cell Metabolism. Plant Physiology, 2016, 172, 1371-1392.	4.8	111
33	Photosynthesis in nonâ€foliar tissues: implications for yield. Plant Journal, 2020, 101, 1001-1015.	5.7	109
34	Photonic multilayer structure of Begonia chloroplasts enhances photosynthetic efficiency. Nature Plants, 2016, 2, 16162.	9.3	108
35	High resolution imaging of photosynthetic activities of tissues, cells and chloroplasts in leaves. Journal of Experimental Botany, 2001, 52, 615-621.	4.8	101
36	Does Size Matter? Atmospheric CO2 May Be a Stronger Driver of Stomatal Closing Rate Than Stomatal Size in Taxa That Diversified under Low CO2. Frontiers in Plant Science, 2016, 7, 1253.	3.6	99

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37	Heterogeneity in Stomatal Characteristics. Advances in Botanical Research, 1997, 26, 317-352.	1.1	95
38	Sea anemones may thrive in a high CO₂ world. Global Change Biology, 2012, 18, 3015-3025.	9.5	95
39	Responses of Photosynthetic Electron Transport in Stomatal Guard Cells and Mesophyll Cells in Intact Leaves to Light, CO2, and Humidity. Plant Physiology, 2002, 128, 52-62.	4.8	94
40	Time-Series Transcriptomics Reveals That AGAMOUS-LIKE22 Affects Primary Metabolism and Developmental Processes in Drought-Stressed Arabidopsis. Plant Cell, 2016, 28, 345-366.	6.6	92
41	Acclimation to Fluctuating Light Impacts the Rapidity of Response and Diurnal Rhythm of Stomatal Conductance. Plant Physiology, 2018, 176, 1939-1951.	4.8	92
42	Stimulating photosynthetic processes increases productivity and water-use efficiency in the field. Nature Plants, 2020, 6, 1054-1063.	9.3	91
43	Reductions in mesophyll and guard cell photosynthesis impact on the control of stomatal responses to light and CO2. Journal of Experimental Botany, 2008, 59, 3609-3619.	4.8	83
44	Diurnal Variation in Gas Exchange: The Balance between Carbon Fixation and Water Loss. Plant Physiology, 2017, 174, 614-623.	4.8	81
45	Measuring the dynamic photosynthome. Annals of Botany, 2018, 122, 207-220.	2.9	81
46	The role of photosynthesis related pigments in light harvesting, photoprotection and enhancement of photosynthetic yield in planta. Photosynthesis Research, 2022, 152, 23-42.	2.9	79
47	The tradeâ€off between the lightâ€harvesting and photoprotective functions of fucoxanthinâ€chlorophyll proteins dominates light acclimation in Emiliania huxleyi (clone <scp>CCMP</scp> 1516). New Phytologist, 2013, 200, 74-85.	7.3	78
48	Overexpression of Plastid Transketolase in Tobacco Results in a Thiamine Auxotrophic Phenotype. Plant Cell, 2015, 27, 432-447.	6.6	76
49	Lateral Diffusion of CO2 in Leaves Is Not Sufficient to Support Photosynthesis. Plant Physiology, 2005, 139, 254-266.	4.8	75
50	Light availability determines susceptibility of reef building corals to ocean acidification. Coral Reefs, 2013, 32, 327-337.	2.2	75
51	Leaf anatomical traits which accommodate the facultative engagement of crassulacean acid metabolism in tropical trees of the genus Clusia. Journal of Experimental Botany, 2014, 65, 3513-3523.	4.8	71
52	The impact of slow stomatal kinetics on photosynthesis and water use efficiency under fluctuating light. Plant Physiology, 2021, 186, 998-1012.	4.8	71
53	GIANT CHLOROPLAST 1 Is Essential for Correct Plastid Division in Arabidopsis. Current Biology, 2004, 14, 776-781.	3.9	68
54	Constitutive salicylic acid defences do not compromise seed yield, drought tolerance and water productivity in the Arabidopsis accession C24. Plant, Cell and Environment, 2010, 33, 1959-1973.	5.7	67

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55	Photosynthesis and Stomatal Behaviour. Progress in Botany Fortschritte Der Botanik, 2010, , 265-304.	0.3	66
56	Into the Shadows and Back into Sunlight: Photosynthesis in Fluctuating Light. Annual Review of Plant Biology, 2022, 73, 617-648.	18.7	66
57	Natural genetic variation in photosynthesis: an untapped resource to increase crop yield potential?. Plant Journal, 2020, 101, 518-528.	5.7	65
58	High C3 photosynthetic capacity and high intrinsic water use efficiency underlies the high productivity of the bioenergy grass Arundo donax. Scientific Reports, 2016, 6, 20694.	3.3	64
59	Effects of elevated carbon dioxide and ozone on potato tuber quality in the European multiple-site experiment â€˜CHIP-projectâ€™. European Journal of Agronomy, 2002, 17, 369-381.	4.1	62
60	Guard Cell Starch Degradation Yields Glucose for Rapid Stomatal Opening in Arabidopsis. Plant Cell, 2020, 32, 2325-2344.	6.6	62
61	Dynamic leaf energy balance: deriving stomatal conductance from thermal imaging in a dynamic environment. Journal of Experimental Botany, 2019, 70, 2839-2855.	4.8	61
62	Phytotoxicity of silver nanoparticles on Vicia faba: Evaluation of particle size effects on photosynthetic performance and leaf gas exchange. Science of the Total Environment, 2020, 701, 134816.	8.0	61
63	Responses of Photosynthetic Electron Transport in Stomatal Guard Cells and Mesophyll Cells in Intact Leaves to Light, CO2, and Humidity. Plant Physiology, 2002, 128, 52-62.	4.8	59
64	A novel system for spatial and temporal imaging of intrinsic plant water use efficiency. Journal of Experimental Botany, 2013, 64, 4993-5007.	4.8	56
65	Rising CO ₂ drives divergence in water use efficiency of evergreen and deciduous plants. Science Advances, 2019, 5, eaax7906.	10.3	56
66	Phototropins maintain robust circadian oscillation of <scp>PSII</scp> operating efficiency under blue light. Plant Journal, 2015, 83, 1034-1045.	5.7	55
67	Impact of a simulated oil spill on benthic phototrophs and nitrogenâ€fixing bacteria in mudflat mesocosms. Environmental Microbiology, 2013, 15, 242-252.	3.8	52
68	An Optimal Frequency in Ca²⁺ Oscillations for Stomatal Closure Is an Emergent Property of Ion Transport in Guard Cells. Plant Physiology, 2016, 170, 33-42.	4.8	51
69	High throughput procedure utilising chlorophyll fluorescence imaging to phenotype dynamic photosynthesis and photoprotection in leaves under controlled gaseous conditions. Plant Methods, 2019, 15, 109.	4.3	51
70	A Key Marine Diazotroph in a Changing Ocean: The Interacting Effects of Temperature, CO2 and Light on the Growth of Trichodesmium erythraeum IMS101. PLoS ONE, 2017, 12, e0168796.	2.5	50
71	C₃ photosynthesis in the desert plant Rhazya stricta is fully functional at high temperatures and light intensities. New Phytologist, 2014, 201, 862-873.	7.3	49
72	From green to gold: agricultural revolution for food security. Journal of Experimental Botany, 2020, 71, 2211-2215.	4.8	49

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73	Effects of elevated carbon dioxide and ozone on the growth and yield of potatoes (Solanum) Tj ETQq1 1 0.784314 rgBT /Overlock 10	7.3	48
74	Effect of elevated CO 2 on the stomatal distribution and leaf physiology of Alnus glutinosa. New Phytologist, 2000, 145, 511-521.	7.3	47
75	Decreased SBPase activity alters growth and development in transgenic tobacco plants. Plant, Cell and Environment, 2006, 29, 48-58.	5.7	47
76	Arabidopsis CP12 mutants have reduced levels of phosphoribulokinase and impaired function of the Calvinâ€“Benson cycle. Journal of Experimental Botany, 2017, 68, 2285-2298.	4.8	45
77	Rapid and straightforward estimates of photosynthetic characteristics using a portable gas exchange system. Photosynthetica, 1998, 34, 265-279.	1.7	43
78	Photosynthetic and stomatal responses of potatoes grown under elevated CO2 and/or O3â€”results from the European CHIP-programme. European Journal of Agronomy, 2002, 17, 337-352.	4.1	43
79	Abscisic acid signalling determines susceptibility of bundle sheath cells to photoinhibition in high light-exposed Arabidopsis leaves. Philosophical Transactions of the Royal Society B: Biological Sciences, 2014, 369, 20130234.	4.0	43
80	Photosynthetic responses to elevated CO2and O3 in field-grown potato(Solanum tuberosum). Journal of Plant Physiology, 2001, 158, 309-323.	3.5	42
81	Modelling water use efficiency in a dynamic environment: An example using Arabidopsis thaliana. Plant Science, 2016, 251, 65-74.	3.6	42
82	Impact of elevated CO2 and O3 on gas exchange parameters and epidermal characteristics in potato (Solanum tuberosum L.). Journal of Experimental Botany, 2002, 53, 737-746.	4.8	41
83	Unexpected Connections between Humidity and Ion Transport Discovered Using a Model to Bridge Guard Cell-to-Leaf Scales. Plant Cell, 2017, 29, 2921-2939.	6.6	39
84	Does lateral gas diffusion in leaves matter?. Plant, Cell and Environment, 2007, 30, 1072-1085.	5.7	34
85	Pyrenoid loss in Chlamydomonas reinhardtii causes limitations in CO2 supply, but not thylakoid operating efficiency. Journal of Experimental Botany, 2017, 68, 3903-3913.	4.8	33
86	Nitrogen and phosphorus limitation of oceanic microbial growth during spring in the Gulf of Aqaba. Aquatic Microbial Ecology, 2009, 56, 227-239.	1.8	33
87	Photosynthesis and crop productivity are enhanced by glucoseâ€functionalised carbon dots. New Phytologist, 2021, 229, 783-790.	7.3	32
88	Heme b in marine phytoplankton and particulate material from the North Atlantic Ocean. Marine Ecology - Progress Series, 2013, 483, 1-17.	1.9	32
89	Lateral CO2 Diffusion inside Dicotyledonous Leaves Can Be Substantial: Quantification in Different Light Intensities. Plant Physiology, 2007, 145, 680-690.	4.8	30
90	Effects of elevated CO2 and O3 on tuber quality in potato (Solanum tuberosum L.). Agriculture, Ecosystems and Environment, 2001, 87, 273-285.	5.3	29

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91	Genotypic, Developmental and Environmental Effects on the Rapidity of gs in Wheat: Impacts on Carbon Gain and Water-Use Efficiency. Frontiers in Plant Science, 2019, 10, 492.	3.6	29
92	Guard cell endomembrane Ca2+-ATPases underpin a â€˜carbon memoryâ€™ of photosynthetic assimilation that impacts on water-use efficiency. Nature Plants, 2021, 7, 1301-1313.	9.3	28
93	Visualising patterns of CO 2 diffusion in leaves. New Phytologist, 2006, 169, 641-643.	7.3	27
94	The temporal foliar transcriptome of the perennial C3 desert plant Rhazya stricta in its natural environment. BMC Plant Biology, 2014, 14, 2.	3.6	27
95	Responses of photosynthetic electron transport in stomatal guard cells and mesophyll cells in intact leaves to light, CO2, and humidity. Plant Physiology, 2002, 128, 52-62.	4.8	27
96	Light, power, action! Interaction of respiratory energyâ€•and blue lightâ€•induced stomatal movements. New Phytologist, 2021, 231, 2231-2246.	7.3	26
97	Using Growth and Transpiration Phenotyping Under Controlled Conditions to Select Water Efficient Banana Genotypes. Frontiers in Plant Science, 2019, 10, 352.	3.6	25
98	Effects of elevated CO₂ and temperature on phytoplankton community biomass, species composition and photosynthesis during an experimentally induced autumn bloom in the western English Channel. Biogeosciences, 2018, 15, 3203-3222.	3.3	24
99	Thermography methods to assess stomatal behaviour in a dynamic environment. Journal of Experimental Botany, 2020, 71, 2329-2338.	4.8	24
100	Global Sensitivity Analysis of OnGuard Models Identifies Key Hubs for Transport Interaction in Stomatal Dynamics. Plant Physiology, 2017, 174, 680-688.	4.8	23
101	Consistent Relationship between Field-Measured Stomatal Conductance and Theoretical Maximum Stomatal Conductance in C₃Woody Angiosperms in Four Major Biomes. International Journal of Plant Sciences, 2020, 181, 142-154.	1.3	23
102	Variation in key leaf photosynthetic traits across wheat wild relatives is accession dependent not species dependent. New Phytologist, 2020, 228, 1767-1780.	7.3	23
103	Natural variation of lifeâ€history traits, water use, and drought responses in Arabidopsis. Plant Direct, 2018, 2, e00035.	1.9	22
104	Coordination Between Photosynthesis and Stomatal Behavior. Advances in Photosynthesis and Respiration, 2018, , 141-161.	1.0	22
105	Convergence in Maximum Stomatal Conductance of C3 Woody Angiosperms in Natural Ecosystems Across Bioclimatic Zones. Frontiers in Plant Science, 2019, 10, 558.	3.6	22
106	Stomatal function and physiology. , 2004, , 217-242.		21
107	Stomata on the abaxial and adaxial leaf surfaces contribute differently to leaf gas exchange and photosynthesis in wheat. New Phytologist, 2022, 235, 1743-1756.	7.3	20
108	An Integrated Response of Trichodesmium erythraeum IMS101 Growth and Photo-Physiology to Iron, CO2, and Light Intensity. Frontiers in Microbiology, 2018, 9, 624.	3.5	19

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109	Stability of wheat grain yields over three field seasons in the UK. Food and Energy Security, 2019, 8, e00147.	4.3	18
110	ZnO nanoparticles impact on the photosynthetic activity of Vicia faba: Effect of particle size and concentration. NanoImpact, 2020, 19, 100246.	4.5	18
111	Inorganic carbon and pH dependency of photosynthetic rates in Trichodesmium. Journal of Experimental Botany, 2018, 69, 3651-3660.	4.8	17
112	The physiological cost of diazotrophy for Trichodesmium erythraeum IMS101. PLoS ONE, 2018, 13, e0195638.	2.5	17
113	Natural variation in stomatal dynamics drives divergence in heat stress tolerance and contributes to seasonal intrinsic water-use efficiency in Vitis vinifera (subsp. sativa and) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 50 57	4.8	16
114	Preface. Journal of Experimental Botany, 2015, 66, 5385-5387.	4.8	15
115	Evolutionary tradeâ€offs in stomatal spacing. New Phytologist, 2016, 210, 1149-1151.	7.3	15
116	Contrasting Responses to Stress Displayed by Tobacco Overexpressing an Algal Plastid Terminal Oxidase in the Chloroplast. Frontiers in Plant Science, 2020, 11, 501.	3.6	15
117	Fuelling life: recent advances in photosynthesis research. Plant Journal, 2020, 101, 753-755.	5.7	15
118	Chitosan mitigates the adverse effects and improves photosynthetic activity in rice (Oryza) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 382	1.7	15
119	CO2 modulation of the rates of photosynthesis and light-dependent O2 consumption inTrichodesmium. Journal of Experimental Botany, 2019, 70, 589-597.	4.8	12
120	Timeâ€series transcriptomics reveals a BBX32â€directed control of acclimation to high light in mature Arabidopsis leaves. Plant Journal, 2021, 107, 1363-1386.	5.7	11
121	Spatial and temporal variation in gas exchange over the lower surface of Phaseolus vulgaris L. primary leaves. Journal of Experimental Botany, 1999, 50, 1381-1391.	4.8	10
122	Photosynthesis in variable environments. Journal of Experimental Botany, 2015, 66, 2371-2372.	4.8	9
123	Survey of Tools for Measuring In Vivo Photosynthesis. Methods in Molecular Biology, 2018, 1770, 3-24.	0.9	9
124	Limitation of dimethylsulfoniopropionate synthesis at high irradiance in natural phytoplankton communities of the Tropical Atlantic. Limnology and Oceanography, 2018, 63, 227-242.	3.1	8
125	Chapter 2 Stomatal Responses to Climate Change. Advances in Photosynthesis and Respiration, 2021, , 17-47.	1.0	8
126	Chlorophyll Fluorescence Imaging. Methods in Molecular Biology, 2018, 1770, 121-140.	0.9	7

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127	Day length as a key factor moderating the response of coccolithophore growth to elevated pCO₂. Limnology and Oceanography, 2019, 64, 1284-1296.	3.1	7
128	Measuring Redox Changes In Vivo in Leaves: Prospects and Technical Challenges. Methods in Molecular Biology, 2008, 476, 65-75.	0.9	6
129	Effects of elevated CO2 on phytoplankton community biomass and species composition during a spring Phaeocystis spp. bloom in the western English Channel. Harmful Algae, 2017, 67, 92-106.	4.8	6
130	Projected expansion of Trichodesmiumâ€™s geographical distribution and increase in growth potential in response to climate change. Global Change Biology, 2020, 26, 6445-6456.	9.5	6
131	Stomatal Responses to Light, CO2, and Mesophyll Tissue in Vicia faba and KalanchoÃ« fedtschenkoi. Frontiers in Plant Science, 2021, 12, 740534.	3.6	6
132	Field-grown ictB tobacco transformants show no difference in photosynthetic efficiency for biomass relative to the wild type. Journal of Experimental Botany, 2022, 73, 4897-4907.	4.8	5
133	Diverse Physiological and Physical Responses among Wild, Landrace and Elite Barley Varieties Point to Novel Breeding Opportunities. Agronomy, 2021, 11, 921.	3.0	3
134	Preface. Journal of Experimental Botany, 2013, 64, 3923-3924.	4.8	2
135	Carbon fixation. , 2022, , 31-58.		2
136	A novel membrane inletâ€infrared gas analysis (MIâ€IRGA) system for monitoring of seawater carbonate system. Limnology and Oceanography: Methods, 2017, 15, 38-53.	2.0	1
137	Emergent Oscillatory Properties in Modelling Ion Transport of Guard Cells. , 2015, , 323-342.		0