

# Chikahiro Miyake

## List of Publications by Year in descending order

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91  
papers

4,733  
citations

117619

34  
h-index

102480

66  
g-index

93  
all docs

93  
docs citations

93  
times ranked

3471  
citing authors

#	ARTICLE	IF	CITATIONS
1	Cyclic electron flow around photosystem I is essential for photosynthesis. <i>Nature</i> , 2004, 429, 579-582.	27.8	793
2	Alternative Electron Flows (Water-Water Cycle and Cyclic Electron Flow Around PSI) in Photosynthesis: Molecular Mechanisms and Physiological Functions. <i>Plant and Cell Physiology</i> , 2010, 51, 1951-1963.	3.1	263
3	Superoxide and Singlet Oxygen Produced within the Thylakoid Membranes Both Cause Photosystem I Photoinhibition. <i>Plant Physiology</i> , 2016, 171, 1626-1634.	4.8	211
4	Ferredoxin-Dependent Photoreduction of the Monodehydroascorbate Radical in Spinach Thylakoids. <i>Plant and Cell Physiology</i> , 1994, 35, 539-549.	3.1	182
5	Physiological Functions of the Water-Water Cycle (Mehler Reaction) and the Cyclic Electron Flow around PSI in Rice Leaves. <i>Plant and Cell Physiology</i> , 2002, 43, 1017-1026.	3.1	176
6	CO <sub>2</sub> Response of Cyclic Electron Flow around PSI (CEF-PSI) in Tobacco Leaves—Relative Electron fluxes through PSI and PSII Determine the Magnitude of Non-photochemical Quenching (NPQ) of Chl Fluorescence. <i>Plant and Cell Physiology</i> , 2005, 46, 629-637.	3.1	163
7	Biosynthesis of astaxanthin in tobacco leaves by transplastomic engineering. <i>Plant Journal</i> , 2008, 55, 857-868.	5.7	155
8	Determination of the Rate of Photoreduction of O <sub>2</sub> in the Water-Water Cycle in Watermelon Leaves and Enhancement of the Rate by Limitation of Photosynthesis. <i>Plant and Cell Physiology</i> , 2000, 41, 335-343.	3.1	150
9	Repetitive Short-Pulse Light Mainly Inactivates Photosystem I in Sunflower Leaves. <i>Plant and Cell Physiology</i> , 2014, 55, 1184-1193.	3.1	148
10	Effects of Light Intensity on Cyclic Electron Flow Around PSI and its Relationship to Non-photochemical Quenching of Chl Fluorescence in Tobacco Leaves. <i>Plant and Cell Physiology</i> , 2005, 46, 1819-1830.	3.1	117
11	Chloroplastic <i>ATP</i> synthase builds up a proton motive force preventing production of reactive oxygen species in photosystem I. <i>Plant Journal</i> , 2017, 91, 306-324.	5.7	96
12	The Liverwort, <i>Marchantia</i> , Drives Alternative Electron Flow Using a Flavodiiron Protein to Protect PSI. <i>Plant Physiology</i> , 2017, 173, 1636-1647.	4.8	91
13	Enhancement of Cyclic Electron Flow Around PSI at High Light and its Contribution to the Induction of Non-Photochemical Quenching of Chl Fluorescence in Intact Leaves of Tobacco Plants. <i>Plant and Cell Physiology</i> , 2004, 45, 1426-1433.	3.1	89
14	Oxidation of P700 Ensures Robust Photosynthesis. <i>Frontiers in Plant Science</i> , 2018, 9, 1617.	3.6	87
15	Purification and Characterization of Class-I and Class-II Fructose-1,6-bisphosphate Aldolases from the Cyanobacterium <i>Synechocystis</i> sp. PCC 6803. <i>Plant and Cell Physiology</i> , 2003, 44, 326-333.	3.1	79
16	Methylglyoxal functions as Hill oxidant and stimulates the photoreduction of O <sub>2</sub> at photosystem I: a symptom of plant diabetes. <i>Plant, Cell and Environment</i> , 2011, 34, 1454-1464.	5.7	78
17	FLAVODIIRON2 and FLAVODIIRON4 Proteins Mediate an Oxygen-Dependent Alternative Electron Flow in <i>Synechocystis</i> sp. PCC 6803 under CO <sub>2</sub> -Limited Conditions A. <i>Plant Physiology</i> , 2015, 167, 472-480.	4.8	77
18	Diversity of strategies for escaping reactive oxygen species production within photosystem I among land plants: <i>P700</i> oxidation system is prerequisite for alleviating photoinhibition in photosystem I. <i>Physiologia Plantarum</i> , 2017, 161, 56-74.	5.2	73

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19	Ferredoxin Limits Cyclic Electron Flow around PSI (CEF-PSI) in Higher Plants—Stimulation of CEF-PSI enhances Non-Photochemical Quenching of Chl Fluorescence in Transplastomic Tobacco. <i>Plant and Cell Physiology</i> , 2006, 47, 1355-1371.	3.1	67
20	Acclimation of Tobacco Leaves to High Light Intensity Drives the Plastoquinone Oxidation System—Relationship Among the Fraction of Open PSII Centers, Non-Photochemical Quenching of Chl Fluorescence and the Maximum Quantum Yield of PSII in the Dark. <i>Plant and Cell Physiology</i> , 2009, 50, 730-743.	3.1	64
21	Responses of the Photosynthetic Electron Transport Reactions Stimulate the Oxidation of the Reaction Center Chlorophyll of Photosystem I, P700, under Drought and High Temperatures in Rice. <i>International Journal of Molecular Sciences</i> , 2019, 20, 2068.	4.1	63
22	The Calvin Cycle Inevitably Produces Sugar-Derived Reactive Carbonyl Methylglyoxal During Photosynthesis: A Potential Cause of Plant Diabetes. <i>Plant and Cell Physiology</i> , 2014, 55, 333-340.	3.1	61
23	Photoinactivation of Ascorbate Peroxidase in Isolated Tobacco Chloroplasts: Galdieria partita APX Maintains the Electron Flux through the Water—Water Cycle in Transplastomic Tobacco Plants. <i>Plant and Cell Physiology</i> , 2006, 47, 200-210.	3.1	58
24	Molecular Mechanism of Oxidation of P700 and Suppression of ROS Production in Photosystem I in Response to Electron-Sink Limitations in C3 Plants. <i>Antioxidants</i> , 2020, 9, 230.	5.1	57
25	Oxidation of P700 in Photosystem I Is Essential for the Growth of Cyanobacteria. <i>Plant Physiology</i> , 2016, 172, 1443-1450.	4.8	56
26	Cyclic Flow of Electrons within PSII in Thylakoid Membranes. <i>Plant and Cell Physiology</i> , 2001, 42, 508-515.	3.1	55
27	Cyclic Electron Flow within PSII Protects PSII from its Photoinhibition in Thylakoid Membranes from Spinach Chloroplasts. <i>Plant and Cell Physiology</i> , 2003, 44, 457-462.	3.1	49
28	Overexpression of flv3 improves photosynthesis in the cyanobacterium <i>Synechocystis</i> sp. PCC6803 by enhancement of alternative electron flow. <i>Biotechnology for Biofuels</i> , 2014, 7, 493.	6.2	49
29	Reduction-Induced Suppression of Electron Flow (RISE) in the Photosynthetic Electron Transport System of <i>Synechococcus elongatus</i> PCC 7942. <i>Plant and Cell Physiology</i> , 2016, 57, pcv198.	3.1	48
30	Land plants drive photorespiration as higher electron sink: comparative study of post-illumination transient $O_2$ uptake rates from liverworts to angiosperms through ferns and gymnosperms. <i>Physiologia Plantarum</i> , 2017, 161, 138-149.	5.2	45
31	What Quantity of Photosystem I Is Optimum for Safe Photosynthesis?. <i>Plant Physiology</i> , 2019, 179, 1479-1485.	4.8	45
32	Identification of the electron donor to flavodiiron proteins in <i>Synechocystis</i> sp. PCC 6803 by in vivo spectroscopy. <i>Biochimica Et Biophysica Acta - Bioenergetics</i> , 2020, 1861, 148256.	1.0	38
33	Diverse strategies of $O_2$ usage for preventing photo-oxidative damage under $CO_2$ limitation during algal photosynthesis. <i>Scientific Reports</i> , 2017, 7, 41022.	3.3	36
34	Functional Analysis of the AKR4C Subfamily of <i>Arabidopsis thaliana</i> : Model Structures, Substrate Specificity, Acrolein Toxicity, and Responses to Light and $[CO_2]$ . <i>Bioscience, Biotechnology and Biochemistry</i> , 2013, 77, 2038-2045.	1.3	35
35	$O_2$ -dependent large electron flow functioned as an electron sink, replacing the steady-state electron flux in photosynthesis in the cyanobacterium <i>Synechocystis</i> sp. PCC 6803, but not in the cyanobacterium <i>Synechococcus</i> sp. PCC 7942. <i>Bioscience, Biotechnology and Biochemistry</i> , 2014, 78, 384-393.	1.3	35
36	Photorespiration provides the chance of cyclic electron flow to operate for the redox-regulation of P700 in photosynthetic electron transport system of sunflower leaves. <i>Photosynthesis Research</i> , 2016, 129, 279-290.	2.9	35

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37	Cyclic Electron Flow within PSII Functions in Intact Chloroplasts from Spinach Leaves. <i>Plant and Cell Physiology</i> , 2002, 43, 951-957.	3.1	33
38	PROTON GRADIENT REGULATION 5 supports linear electron flow to oxidize photosystem I. <i>Physiologia Plantarum</i> , 2018, 164, 337-348.	5.2	33
39	Respiration accumulates Calvin cycle intermediates for the rapid start of photosynthesis in <i>Synechocystis</i> sp. PCC 6803. <i>Bioscience, Biotechnology and Biochemistry</i> , 2014, 78, 1997-2007.	1.3	32
40	Post-illumination transient O <sub>2</sub> uptake is driven by photorespiration in tobacco leaves. <i>Physiologia Plantarum</i> , 2016, 156, 227-238.	5.2	30
41	Changing frequency of fluctuating light reveals the molecular mechanism for P700 oxidation in plant leaves. <i>Plant Direct</i> , 2018, 2, e00073.	1.9	29
42	Reduction-Induced Suppression of Electron Flow (RISE) Is Relieved by Non-ATP-Consuming Electron Flow in <i>Synechococcus elongatus</i> PCC 7942. <i>Frontiers in Microbiology</i> , 2018, 9, 886.	3.5	29
43	Oxidation of P700 Induces Alternative Electron Flow in Photosystem I in Wheat Leaves. <i>Plants</i> , 2019, 8, 152.	3.5	29
44	Why don't plants have diabetes? Systems for scavenging reactive carbonyls in photosynthetic organisms. <i>Biochemical Society Transactions</i> , 2014, 42, 543-547.	3.4	28
45	Comparative analysis of strategies to prepare electron sinks in aquatic photoautotrophs. <i>Photosynthesis Research</i> , 2019, 139, 401-411.	2.9	26
46	Growth Light Environment Changes the Sensitivity of Photosystem I Photoinhibition Depending on Common Wheat Cultivars. <i>Frontiers in Plant Science</i> , 2019, 10, 686.	3.6	25
47	Effects of genetic manipulation of the activity of photorespiration on the redox state of photosystem I and its robustness against excess light stress under CO <sub>2</sub> -limited conditions in rice. <i>Photosynthesis Research</i> , 2018, 137, 431-441.	2.9	23
48	Light-Harvesting Strategy during CO <sub>2</sub> -Dependent Photosynthesis in the Green Alga <i>Chlamydomonas reinhardtii</i> . <i>Journal of Physical Chemistry Letters</i> , 2018, 9, 1028-1033.	4.6	22
49	Diversity in photosynthetic electron transport under [CO <sub>2</sub> ]-limitation: the cyanobacterium <i>Synechococcus</i> sp. PCC 7002 and green alga <i>Chlamydomonas reinhardtii</i> drive an O <sub>2</sub> -dependent alternative electron flow and non-photochemical quenching of chlorophyll fluorescence during CO <sub>2</sub> -limited photosynthesis. <i>Photosynthesis Research</i> , 2016, 130, 293-305.	2.9	21
50	Overproduction of Chloroplast Glyceraldehyde-3-Phosphate Dehydrogenase Improves Photosynthesis Slightly under Elevated [CO <sub>2</sub> ] Conditions in Rice. <i>Plant and Cell Physiology</i> , 2021, 62, 156-165.	3.1	21
51	Acrolein, an $\alpha,\beta$ -Unsaturated Carbonyl, Inhibits Both Growth and PSII Activity in the Cyanobacterium <i>Synechocystis</i> sp. PCC 6803. <i>Bioscience, Biotechnology and Biochemistry</i> , 2013, 77, 1655-1660.	1.3	20
52	Photosynthetic Parameters Show Specific Responses to Essential Mineral Deficiencies. <i>Antioxidants</i> , 2021, 10, 996.	5.1	20
53	Photorespiration Coupled With CO <sub>2</sub> Assimilation Protects Photosystem I From Photoinhibition Under Moderate Poly(Ethylene Glycol)-Induced Osmotic Stress in Rice. <i>Frontiers in Plant Science</i> , 2020, 11, 1121.	3.6	19
54	Photorespiration Enhances Acidification of the Thylakoid Lumen, Reduces the Plastoquinone Pool, and Contributes to the Oxidation of P700 at a Lower Partial Pressure of CO <sub>2</sub> in Wheat Leaves. <i>Plants</i> , 2020, 9, 319.	3.5	19

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55	The Water-Water Cycle in Algae. <i>Advances in Photosynthesis and Respiration</i> , 2003, , 183-204.	1.0	18
56	Scavenging Systems for Reactive Carbonyls in the Cyanobacterium <i>Synechocystis</i> sp. PCC 6803. <i>Bioscience, Biotechnology and Biochemistry</i> , 2013, 77, 2441-2448.	1.3	18
57	Suppression of Chloroplastic Alkenal/One Oxidoreductase Represses the Carbon Catabolic Pathway in <i>Arabidopsis</i> Leaves during Night. <i>Plant Physiology</i> , 2016, 170, 2024-2039.	4.8	17
58	Order-of-magnitude enhancement in photocurrent generation of <i>Synechocystis</i> sp. PCC 6803 by outer membrane deprivation. <i>Nature Communications</i> , 2022, 13, .	12.8	17
59	4-Ketoantheraxanthin, a novel carotenoid produced by the combination of the bacterial enzyme $\beta$ -carotene ketolase CrtW and endogenous carotenoid biosynthetic enzymes in higher plants. <i>Tetrahedron Letters</i> , 2008, 49, 3294-3296.	1.4	16
60	Antimycin A inhibits cytochrome b559-mediated cyclic electron flow within photosystem II. <i>Photosynthesis Research</i> , 2019, 139, 487-498.	2.9	16
61	Identification of a Novel Mutation Exacerbated the PSI Photoinhibition in <i>pgr5/pgrl1</i> Mutants; Caution for Overestimation of the Phenotypes in <i>Arabidopsis pgr5-1</i> Mutant. <i>Cells</i> , 2021, 10, 2884.	4.1	16
62	Intrinsic Fluctuations in Transpiration Induce Photorespiration to Oxidize P700 in Photosystem I. <i>Plants</i> , 2020, 9, 1761.	3.5	15
63	P700 oxidation suppresses the production of reactive oxygen species in photosystem I. <i>Advances in Botanical Research</i> , 2020, 96, 151-176.	1.1	15
64	Quantification of NAD(P)H in cyanobacterial cells by a phenol extraction method. <i>Photosynthesis Research</i> , 2021, 148, 57-66.	2.9	15
65	Photochemistry of Photosystems II and I in Rice Plants Grown under Different N Levels at Normal and High Temperature. <i>Plant and Cell Physiology</i> , 2021, 62, 1121-1130.	3.1	13
66	Characterization of Light-Enhanced Respiration in Cyanobacteria. <i>International Journal of Molecular Sciences</i> , 2021, 22, 342.	4.1	13
67	Suppression of chloroplast triose phosphate isomerase evokes inorganic phosphate-limited photosynthesis in rice. <i>Plant Physiology</i> , 2022, 188, 1550-1562.	4.8	13
68	Altered levels of primary metabolites in response to exogenous indole-3-acetic acid in wild type and auxin signaling mutants of <i>Arabidopsis thaliana</i> : A capillary electrophoresis-mass spectrometry analysis. <i>Plant Biotechnology</i> , 2015, 32, 65-79.	1.0	12
69	The difficulty of estimating the electron transport rate at photosystem I. <i>Journal of Plant Research</i> , 2022, 135, 565-577.	2.4	11
70	Respiratory terminal oxidases alleviate photo-oxidative damage in photosystem I during repetitive short-pulse illumination in <i>Synechocystis</i> sp. PCC 6803. <i>Photosynthesis Research</i> , 2018, 137, 241-250.	2.9	10
71	NADPH production in dark stages is critical for cyanobacterial photocurrent generation: a study using mutants deficient in oxidative pentose phosphate pathway. <i>Photosynthesis Research</i> , 2022, 153, 113-120.	2.9	9
72	Metabolic pathway engineering by plastid transformation is a powerful tool for production of compounds in higher plants. <i>Plant Biotechnology</i> , 2009, 26, 39-46.	1.0	8

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73	O <sub>2</sub> -enhanced induction of photosynthesis in rice leaves: the Mehler-ascorbate peroxidase (MAP) pathway drives cyclic electron flow within PSII and cyclic electron flow around PSI. <i>Soil Science and Plant Nutrition</i> , 2012, 58, 718-727.	1.9	8
74	How do photosynthetic organisms manage light stress? A tribute to the late Professor Kozi Asada. <i>Plant and Cell Physiology</i> , 2016, 57, 1351-1353.	3.1	8
75	Effects of co-overproduction of Rubisco and chloroplast glyceraldehyde-3-phosphate dehydrogenase on photosynthesis in rice. <i>Soil Science and Plant Nutrition</i> , 2021, 67, 283-287.	1.9	8
76	Oxidation of the reaction center chlorophyll of photosystem I is induced via close cooperation of photosystems II and I with progress of drought stress in soybean seedlings. <i>Soil Science and Plant Nutrition</i> , 2021, 67, 662-669.	1.9	8
77	Photoprotection mechanisms under different CO <sub>2</sub> regimes during photosynthesis in a green alga <i>Chlorella variabilis</i> . <i>Photosynthesis Research</i> , 2020, 144, 397-407.	2.9	7
78	Photosynthetic Linear Electron Flow Drives CO <sub>2</sub> Assimilation in Maize Leaves. <i>International Journal of Molecular Sciences</i> , 2021, 22, 4894.	4.1	7
79	Responses of the chloroplast glyoxalase system to high CO <sub>2</sub> concentrations. <i>Bioscience, Biotechnology and Biochemistry</i> , 2018, 82, 2072-2083.	1.3	6
80	Evolutionary differentiation between alga- and plant-type plastid terminal oxidase: Study of plastid terminal oxidase PTOX isoforms in <i>Marchantia polymorpha</i> . <i>Biochimica Et Biophysica Acta - Bioenergetics</i> , 2021, 1862, 148309.	1.0	6
81	The ability of P700 oxidation in photosystem I reflects chilling stress tolerance in cucumber. <i>Journal of Plant Research</i> , 2022, 135, 681-692.	2.4	6
82	O <sub>2</sub> supports 3-phosphoglycerate-dependent O <sub>2</sub> evolution in chloroplasts from spinach leaves. <i>Soil Science and Plant Nutrition</i> , 2012, 58, 462-468.	1.9	5
83	Cyclic electron flow around PSI functions in the photoinhibited rice leaves. <i>Soil Science and Plant Nutrition</i> , 2011, 57, 105-113.	1.9	4
84	A Carbon Dioxide Limitation-Inducible Protein, ColA, Supports the Growth of <i>Synechococcus</i> sp. PCC 7002. <i>Marine Drugs</i> , 2017, 15, 390.	4.6	4
85	Physiological Roles of Flavodiiron Proteins and Photorespiration in the Liverwort <i>Marchantia polymorpha</i> . <i>Frontiers in Plant Science</i> , 2021, 12, 668805.	3.6	4
86	Effects of suppression of chloroplast phosphoglycerate kinase on photosynthesis in rice. <i>Photosynthesis Research</i> , 2022, 153, 83-91.	2.9	4
87	Dissection of respiratory and cyclic electron transport in <i>Synechocystis</i> sp. PCC 6803. <i>Journal of Plant Research</i> , 2022, 135, 555-564.	2.4	4
88	Medium-chain dehydrogenase/reductase and aldo-keto reductase scavenge reactive carbonyls in <i>Synechocystis</i> sp. PCC 6803. <i>FEBS Letters</i> , 2018, 592, 1010-1019.	2.8	3
89	Identification of Twelve Different Mineral Deficiencies in Hydroponically Grown Sunflower Plants on the Basis of Short Measurements of the Fluorescence and P700 Oxidation/Reduction Kinetics. <i>Frontiers in Plant Science</i> , 2022, 13, .	3.6	3
90	Metabolic Engineering by Plastid Transformation as a Strategy to Modulate Isoprenoid Yield in Plants. <i>Methods in Molecular Biology</i> , 2010, 643, 213-227.	0.9	2

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91	P700 Oxidation System—The Universal Defense Mechanisms for Avoiding Oxidative Stress in Photosynthetic Organisms: Photosynthetic Organisms Created Defense Systems Through a Struggle Against O <sub>2</sub> . Kagaku To Seibutsu, 2018, 56, 82-94.	0.0	0