

**Poster Sessions 3 and 4**  
**Wednesday and Thursday**

282. Noam Adir	Progress in the engineering of Photosystem II for clean energy production	Noam Adir, Chemistry, Technion - Israel Institute of Technology Shirley Larom, Biology Technion - Israel Institute of Technology Roy Pinhassi, Biology and Chemistry, Technion - Israel Institute of Technology Faris Salama, Chemistry, Technion - Israel Institute of Technology Gadi Schuster, Biology, Technion - Israel Institute of Technology	Photosynthesis and Bioenergy
18. Rachna Agarwal	slr1270 locus of Synechocystis 6803 (E. coli TolC homologue) Cloning, Overexpression, Purification and Biophysical Characterization	Rachna Agarwal Purdue University William A Cramer Purdue University	Photoassimilate use: transport and partitioning
190. Maxime Alexandre	Light harvesting and dissipation in FCP of diatom by single molecule fluorescence spectroscopy	Alexandre maxime, Tjaart Kruger and Rienk van Grondelle, VU University, Amsterdam, Netherlands	Light Harvesting
230. Muhamed Amin	Combined Classical Electrostatic and DFT analysis of the proton and electron loss in the Kok cycle of the oxygen-evolving complex of photosystem II	Muhamed Amin, City College of New York; Serguei Vassiliev, Brock University; Leslie Vogt, Yale University; Gary W. Brudvig, Yale University; Victor S. Batista, Yale University; Doug Bruce, Brock University; and M. R. Gunner, City College of New York	Water oxidation
19. Stéphanie Arrivault	Understanding carbon fixation by use of isotopically labeled CO <sub>2</sub>	Stéphanie Arrivault, Marek Szecowka, Toshihiro Obata, Manuela Guenther, Regina Feil, John Lunn, Alisdair Fernie and Mark Stitt Max Planck Institute of Molecular Plant Physiology, Am Muehlenberg 1, 14476 Potsdam, Germany	Photoassimilate use: transport and partitioning
56. Juliana Artier	Cyclic electron transport of Synechocystis PCC 6803 and its relation with carbon concentrating mechanism.	Juliana Artier, Steven C. Holland, Minquan Zhang, Robert L. Burnap, Oklahoma State University.	C <sub>4</sub> /CAM and CO <sub>2</sub> concentration mechanisms
231. Mizue Asada	Position of the high-affinity site of Mn <sup>2+</sup> at the elementary step of Photoactivation of oxygen evolving complex in photosystem II	Mizue Asada, Nagoya University; Hiroyuki Mino, Nagoya University;	Water oxidation
283. Shaun Bailey	Global Transcriptional Regulators of the Photo Acclimation Response to Irradiance	Shaun Bailey, Synthetic Genomics Jonathan Mesuer, Synthetic Genomics Jay McCarren, Synthetic Genomics Soyan Lieberman, Synthetic Genomics Daniel Yee, Synthetic Genomics Aimee Lim, Synthetic Genomics Joseph Weissman, ExxonMobil Roger Prince, ExxonMobil Robert Nielsen, ExxonMobil Robert Brown, Synthetic Genomics Leah Soriaga, Synthetic Genomics James Flatt, Synthetic Genomics Stanley Bower, Synthetic Genomics Craig Venter, Synthetic Genomics	Photosynthesis and Bioenergy
232. Bernard Baituti	STUDY OF THE S <sub>2</sub> STATE GENERATED MULTILINE SIGNAL FROM HIGHER PLANT PHOTOSYSTEM II CORE COMPLEX USING CW EPR SPECTROSCOPY.	Bernard Baituti Research School of Chemistry Australian National University Canberra ACT Australia	Water oxidation
233. Han Bao	Second sphere ligands of the Mn cluster control the reactivity of water oxidation	Han Bao, Oklahoma State University; Preston L. Dilbeck, Oklahoma State University; Curtis L. Neveu, Oklahoma State University; Robert L. Burnap, Oklahoma State University	Water oxidation

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234. Victor Batista	Studies of PCET in Natural and Artificial Photosynthesis	Victor S. Batista	Water oxidation
57. Chandra Bellasio	Maize C4 biochemical responses to unbalanced ATP production under different light qualities	Chandra Bellasio Department of Plant Sciences University of Cambridge Downing Street Cambridge CB2 3EA (UK) www.plantsci.cam.ac.uk	C4/CAM and CO2 concentration mechanisms
284. Tyler Bennett	Effect of alkanethiol SAM chain length on photocurrent generation from photosystem I modified electrodes	Tyler Bennett, University of Tennessee; Dibyendu Mukherjee, University of Tennessee; Bamin Khomami, University of Tennessee	Photosynthesis and Bioenergy
285. Fiona Bentley	Photosynthetic isoprene (C5H8) production in the cyanobacterium Synechocystis sp. PCC 6803	Fiona K. Bentley, University of California, Berkeley; Pia Lindberg, University of California, Berkeley; Anastasios Melis, University of California, Berkeley.	Photosynthesis and Bioenergy
62. Matheus Bianconi	Does the magnitude of inhibition of respiration in the light depend on temperature in a tropical C4 grass	Matheus Bianconi, Carlos Martinez, University of Sao Paulo, Brazil. Kevin L. Griffin, Columbia University, USA.	C4/CAM and CO2 concentration mechanisms
286. Thomas Bibby	Optimisation of antenna size to maximise biofuel production in microalgae through single-cell sorting and transcriptomics	Thomas Bibby, University of Southampton Andreas Johansson, , University of Southampton Patrick Stephenson, University of Southampton Mark Moore, University of Southampton Mikhail Zubkov, National Oceanography Centre, Southampton Richard Edwards, University of Southampton Matthew Terry, University of Southampton	Photosynthesis and Bioenergy
82. Christopher Bickford	Influence of leaf anatomy and variable irradiance on mesophyll conductance in Pachycladon (Brassicaceae)	Christopher P. Bickford, Kenyon College; Naomi Kodama, National Institute for Agro-Environmental Sciences; Margaret M. Barbour, University of Sydney	Carbon for water
287. Olga Blifernez-Klassen	The capability of the unicellular phototrophic eukaryote Chlamydomonas reinhardtii to degrade and assimilate cellulose	Olga Blifernez-Klassen, Bielefeld University; Viktor Klassen, Bielefeld University; Anja Doebbe, Bielefeld University; Klaudia Kersting, Bielefeld University; Philipp Grimm, Bielefeld University; Lutz Wobbe, Bielefeld University; Olaf Kruse, Bielefeld University	Photosynthesis and Bioenergy
235. Leanne Bloor	Electron-Coupled-Proton Buffers for Electrolytic Water Splitting	Leanne G. Bloor, University of Glasgow Mark D. Symes, University of Glasgow Leroy Cronin*, University of Glasgow	Water oxidation
58. Anne Borland	The CAM plant Kalanchoe fedtschenkoi degrades leaf starch via the phosphorolytic route	Anne Borland, Newcastle University UK and Oak Ridge National Laboratory, TN Johan Ceusters, Newcastle University UK and Katholieke Universiteit Leuven, Belgium Suzanna Boxall, Louisa Devers, James Hartwell, University of Liverpool, UK	C4/CAM and CO2 concentration mechanisms
236. Daniele Bovi	Magnetic interactions in the Mn4CaO5 core of Photosystem II by Quantum Mechanics / Molecular Mechanics simulations at room temperature	Daniele Bovi, Dept. of Physics, Sapienza - University of Rome, Italy; Daniele Narzi, Dept. of Physics, Sapienza - University of Rome, Italy; Leonardo Guidoni, Dept. of Physics, Sapienza - University of Rome, Italy and Dept. of Physical and Chemical Sciences, University of L'Aquila, Italy.	Water oxidation

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59. Ryan Boyd	The in vitro temperature response of carbonic anhydrase, phosphoenolpyruvate carboxylase, and Rubisco from <i>Setaria viridis</i> : Implications for modeling the temperature dependency of C4 photosynthesis.	Ryan Boyd, Anthony Gandin, Erika Serrano-Romero, Asaph B. Cousins School of Biological Sciences, Washington State University	C4/CAM and CO2 concentration mechanisms
20. Terry Bricker	Photoheterotrophic Growth of the moss, <i>Physcomitrella patens</i>	Terry M. Bricker, Louisiana State University; Adam J. Bell, Louisiana State University; Lan Tran, University of California - Davis; Laurie K. Frankel, Louisiana State University; Steven M. Theg, University of California - Davis	Photoassimilate use: transport and partitioning
192. Claudia Büchel	Carotenoid Biosynthesis in the diatom <i>Phaeodactylum tricornutum</i> : Elucidation and Genetic Engineering of the Pathway	Ulrike Eilers, Michael Dambeck, Jürgen Breitenbach, Claudia Büchel, Gerhard Sandmann Institute of Molecular Biosciences, Goethe University, Frankfurt, Germany	Carotenoids
83. Florian Busch	New insights into the mechanisms regulating the red-light response of stomata	Florian A. Busch, The Australian National University Susanne von Caemmerer, The Australian National University	Carbon for water
21. L. Ruby Carrillo	Are nucleotide transporters found on the envelope of chloroplast involved in photosynthetic energy balance?	L. Ruby Carrillo, Michigan State University; and David M. Kramer, Michigan State University	Photoassimilate use: transport and partitioning
288. Stefano Cazzaniga	Domestication of <i>Chlorella sorokiniana</i> strains for improved light use efficiency in photobioreactors.	Stefano Cazzaniga, University of Verona; Joanna Szaub, University College London; Luca Dall'Osto, University of Verona; Luca Scibilia, University of Verona; Saul Purton, University College London; Roberto Bassi, University of Verona.	Photosynthesis and Bioenergy
237. Ruchira Chatterjee	Electronic Structural Changes of Mn in the Oxygen-Evolving Complex of Photosystem II and its Structural Models	Ruchira Chatterjee, Lawrence Berkeley National Lab; Pieter Glatzel, European Synchrotron Radiation Facility; Rosalie Tran, Lawrence Berkeley National Lab; Roberto Alonso Mori, SLAC National Accelerator Lab; Jan Kern, Lawrence Berkeley National Lab; Guangye Han, Lawrence Berkeley National Lab; Jacob Kanady, Caltech; Emily Tsui, Caltech; Theodor Agapie, Caltech; Vittal K. Yachandra, Lawrence Berkeley National Lab; Junko Yano, Lawrence Berkeley National Lab.	Water oxidation
238. Maria Chrysinia	Trapping Tyrosine Z near the half inhibition temperature for the S2 to S3 transition.	Maria Chrysinia, Georgia Zahariou, Nikolaos Ioannidis, Vasili Petrouleas Institute for Advanced Materials, Physicochemical Processes, Nanotechnology & Microsystems, NCSR "Demokritos"	Water oxidation
239. Wooi Yee Chuah	Low Temperature FTIR Studies on Photosystem II and Computational Modelling of Carboxylate Vibrational Modes in the OEC (Oxygen Evolving Complex)	Wooi Yee Chuah, Australian National University; Elmars Krausz, Australian National University; Terry J. Frankcombe, Australian National University; Warwick Hillier, Australian National University; Ron J. Pace, Australian National University; A. William Rutherford, Imperial College London; Paul J. Smith, Australian National University	Water oxidation
289. Aaron Collins	Remote Monitoring of Growth and Pigmentation in Algal Cultures	Aaron M. Collins, Sandia National Laboratories, Thomas A. Reichardt, Sandia National Laboratories, Robert C. McBride, Sapphire Energy, Craig A. Behnke, Sapphire Energy, Jerilyn A. Timlin, Sandia National Laboratories	Photosynthesis and Bioenergy

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221. Tim Crawford	Expression of the Low-Oxygen-Induced psbA1 Gene Encoding D1' in Synechocystis sp. PCC 6803	Tim S. Crawford, University of Otago; Jocelyn P.S. Chua, University of Otago; Julian J. Eaton-Rye, University of Otago; Tina C. Summerfield, University of Otago.	Reaction center function
240. Katherine Davis	X-ray Emission and Absorption Analysis of the S-state Intermediates of the Photosystem II Protein Complex	Katherine Davis, Purdue University; Gerald Seidler, University of Washington; Yulia Pushkar, Purdue University	Water oxidation
290. Jorge Dinamarca	Diatoms as a platform for renewable energy	Orly Levitan, Jorge Dinamarca, Paul Falkowski Environmental Biophysics and Molecular Ecology Program, Institute of Marine and Coastal Sciences, Rutgers University, New Brunswick, NJ, 08901	Photosynthesis and Bioenergy
241. Charles Dismukes	The Oxygenic Photo-Reaction Centers: In vivo Performance and Mechanism of Water Oxidation	G. Charles Dismukes <sup>a,*</sup> , David Vinyarda <sup>b</sup> , Gennady Ananyeva aWaksman Institute of Microbiology and Department of Chemistry & Chemical Biology, Rutgers University, Piscataway, NJ; bDepartment of Chemistry, Princeton University, Princeton, NJ.	Water oxidation
291. Anja Doebbe	Screening of microalgal strains isolated for high efficiency biofuel production	Anja Doebbe, Bielefeld University; Juliane Wolf, University of Queensland; Gisela Jakob, University of Queensland; Evan Stephens, University of Queensland; Ian Ross, University of Queensland; Ben Hankamer, University of Queensland; Olaf Kruse, Bielefeld University	Photosynthesis and Bioenergy
292. Ipsita Dutta	Biohydrogen production from Synechocystis sp. PCC6803: significance of the diaphorase moiety in hydrogenase formation	Ipsita Dutta, Arizona State University	Photosynthesis and Bioenergy
133. Dörthe Eisele	Robust Excitations Inhabit Supra-molecular Light-Harvesting Nanotubes	Dörthe M. Eisele, MIT; Dylan H. Arias, MIT; Xiaofeng Fu, Brandeis University; Erik A. Bloemsma, University of Groningen; Colby P. Steiner, MIT; Russell A. Jensen, MIT; Patrick Rebentrost, MIT; Holger Eisele, Technische Universität Berlin; Andrei Tokmakoff, University of Chicago; Seth Lloyd, MIT; Keith A. Nelson, MIT; Daniela Nicastro, Brandeis University; Jasper Knoester, University of Groningen; Mounji G. Bawendi, MIT;	Light Harvesting
84. Lauricio Endres	Photochemical and biochemical response of sugarcane to progressive drought and recovery	Romel Duarte Vilela, Thiago Cândido dos Santos, Paul Lineker Amaral de Melo, Lauricio Endres; Universidade Federal de Alagoas, Brazil	Carbon for water
242. Mehmed Ertem	Theoretical Investigation of Competitive Oxygen Kinetic Isotope Effects for Water Oxidation Catalyzed by [MnIII(O)2MnIV(H2O)2(Terpy)2]3+	Mehmed Z. Ertem, Brookhaven National Laboratory and Yale University; Rhitankar Pal, Yale University; Sahr Khan, Yale University; Gary W. Brudvig, Yale University; Victor S. Batista, Yale University	Water oxidation
10. Kleveer Espino	PHOTOSYNTHESIS ASSIMILATION RATE DETERMINATION IN TWO SPECIES OF VEGETATION AT PELADO GAMBOA: A TROPICAL RAIN FOREST	K Espino <sup>1</sup> , J Fábrega <sup>1</sup> , R Pinzón <sup>1</sup> , Francisco Lopez <sup>2</sup> , Eduardo Martínez <sup>2</sup> <sup>1</sup> Centro de Investigaciones Hidráulicas e Hidrotécnicas, <sup>2</sup> Universidad de Castilla de la Mancha.	Regulation of the C3 carbon reduction cycle

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3. Gilbert Ethier	Intracellular dispersal and recycling of (photo)respiratory CO <sub>2</sub> in C <sub>3</sub> plants	Gilbert Ethier, Université Laval; Danny Tholen, Chinese Academy of Sciences; Bernard Genty, Institut de Biologie Environnementale et de Biotechnologie, CEA; Xin-Guang Zhu, Chinese Academy of Sciences; Steeve Pepin, Université Laval	Learning from CO <sub>2</sub> concentrating mechanisms for increasing productivity
85. John Evans	Temperature responses of mesophyll conductance differ greatly between species	John Evans, The Australian National University Susanne von Caemmerer, The Australian National University Soumi Bala, The Australian National University	Carbon for water
86. Christiana Evans-Fitz.Gerald	The influence of elevated CO <sub>2</sub> and subambient O <sub>2</sub> on stomatal function in different evolutionary plant groups	Christiana Evans-Fitz.Gerald, Plant Palaeoecology and Palaeobiology Group, School of Biology and Environmental Science, University College Dublin; Charilaos Yiotis, Plant Palaeoecology and Palaeobiology Group, School of Biology and Environmental Science, University College Dublin; Tracy Lawson, School of Biological Sciences, University of Essex; Jennifer McElwain, Plant Palaeoecology and Palaeobiology Group, School of Biology and Environmental Science, University College Dublin	Carbon for water
4. Britta Förster	Understanding post-translational regulation of cyanobacterial bicarbonate uptake as prerequisite to improving C <sub>3</sub> chloroplast function	Britta Förster, Australian National University; Loraine Tucker, Australian National University; G. Dean Price, Australian National University	Learning from CO <sub>2</sub> concentrating mechanisms for increasing productivity
243. Raimund Fromme	"Towards the time resolved X-ray structure determination of Photosystem II"	Raimund Fromme, Arizona State University, Shibom Basu, Arizona State University, Christopher Kupitz, Arizona State University, Ingo Grotjohann, Arizona State University, Petra Fromme, Arizona State University.	Water oxidation
87. Takashi Fujita	The analysis of the mesophyll roles that control the stomatal responses in C <sub>3</sub> and CAM plants	Takashi Fujita, The University of Tokyo; Ko Noguchi, The University of Tokyo; Ichiro Terashima, The University of Tokyo	Carbon for water
293. Anthony Gandin	Coordination between foliar nitrate assimilation, mitochondrial electron transport and photosynthetic carbon metabolism: Insights from Arabidopsis thaliana T-DNA insertional mutants disrupted in mitochondrial alternative oxidase (aox1a) and uncoupling protein (ucp1).	Anthony Gandin, School of Biological Sciences, Washington State University, Pullman, WA, USA; Mykhaylo Denysyuk, School of Biological Sciences, Washington State University, Pullman, WA, USA; Asaph B. Cousins, School of Biological Sciences, Washington State University, Pullman, WA, USA	Photosynthesis and Bioenergy
59. Oula Ghannoum	Tracing the ecological footprints of C <sub>4</sub> photosynthetic evolution by exploring diversity among C <sub>4</sub> grasses	Oula Ghannoum. Harshini Pinto, David T. Tissue, Robert E. Sharwood. University of Western Sydney, Australia.	C <sub>4</sub> /CAM and CO <sub>2</sub> concentration mechanisms
294. Maria Ghirardi	Assay Detects Differences in the Hydrogen Photoproduction Properties of Algal Strains	Matt Wecker, Genebiologics Paul W. King, National Renewable Energy Laboratory Maria Ghirardi, National Renewable Energy Laboratory	Photosynthesis and Bioenergy

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60. Katarzyna Glowacka	Can cold tolerance of C4 photosynthesis in Miscanthus be transferred to sugarcane?	Katarzyna Glowacka, Energy Biosciences Institute, University of Illinois, 1206 W. Gregory Dr., Urbana, IL 61801, USA, Institute of Plant Genetics, Polish Academy of Sciences, ul. Strzeszyńska 34, 60-479 Poznań, Poland Aasifuddin Ahmed, Stephen P. Long, Erik J. Sacks, Energy Biosciences Institute, University of Illinois, 1206 W. Gregory Dr., Urbana, IL 61801, USA Tom Abbott, Jack C. Comstock, USDA-ARS Sugarcane Field Station, 12990 U.S. HWY 441 N. Canal Point, FL, 33438	C4/CAM and CO2 concentration mechanisms
244. Govindjee	Organic groups/Mn oxide as a promising model for the water-oxidizing complex of Photosystem II: a review and new insights	M.M. Najafpour a, *, D.J. Sedigh a, M. Zarei a, B. Haghghi a and Govindjee b,* a Institute for Advanced Studies in Basic Sciences (IASBS), Zanjan, 45137-66731, Iran; bUniversity of Illinois at Urbana-Champaign, Urbana, Illinois, 61801, USA	Water oxidation
193. Beverley Green	Changes in light intensity affect the conversion of fucoxanthin to 19'-butanoyloxy-fucoxanthin and its distribution in macromolecular complexes in Aureococcus thylakoid membranes.	Meriem Alami, University of British Columbia; Beverley R. Green, University of British Columbia	Carotenoids
245. GUANGYE HAN	Structural Study of the Oxygen Evolving Complex of Photosystem II in the S2 State During the Magnetic Spin State Conversion	Guangye Han, Ruchira Chatterjee, Rosalie Tran, Jan Kern, Vittal Yachandra, Junko Yano Physical Biosciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA	Water oxidation
61. Daijiro Harada	Comparision of transcriptome between C3/C4 types of photosynthesis on Eleocharis vivipara by the next-generation sequencer	Daijiro Harada, Kinki University, Dept. Biotech. Sci; Tomoaki Sakamoto, Nara Institute of Science and Technology; Tetsuya Kurata, Nara Institute of Science and Technology; Katsuyuki Yamato, Kinki University, Dept. Biotech. Sci; Katsura Izui, Kinki University, Institute of Advanced Technology; Motomu Akita, Kinki University, Dept. Biotech. Sci.	C4/CAM and CO2 concentration mechanisms
246. Imed Hasni	Efficiency of the oxygen evolving complex and electron transfer of Photosystem II under action of a trivalent metal toxic cation: Al3+	Imed Hasni, Saber Hamdani and Robert Carpentier Université du Québec à Trois-Rivières, C.P. 500, Trois-Rivières, Québec, Canada G9A 5H7.	Water oxidation
247. Michael Haumann	Alternating electron and proton transfer in photosynthetic water oxidation	Andre Klaus, Freie Universität Berlin, FB Physik, 14195 Berlin, Germany Holger Dau, Freie Universität Berlin, FB Physik, 14195 Berlin, Germany Michael Haumann, Freie Universität Berlin, FB Physik, 14195 Berlin, Germany	Water oxidation
62. David Heckmann	Predicting C4 photosynthesis evolution: modular, individually adaptive steps on a smooth fitness landscape	D. Heckmann, Heinrich-Heine-University, Duesseldorf; S. Schulze, Heinrich-Heine-University, Duesseldorf; A. Denton, Heinrich-Heine-University, Duesseldorf; U. Gowik, Heinrich-Heine-University, Duesseldorf; P. Westhoff, Heinrich-Heine-University, Duesseldorf; A. P. M. Weber, Heinrich-Heine-University, Duesseldorf; M. J. Lercher, Heinrich-Heine-University, Duesseldorf	C4/CAM and CO2 concentration mechanisms

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11. Naoki Hirotsu	Changes in the photosynthetic pathways in amphibious plant under submerged conditions	Tomomi Yokoyama, Toyo University; Aiko Saitou, Toyo University; Naoki Hirotsu, Toyo University	Regulation of the C3 carbon reduction cycle
63. Steven Holland	Redox changes accompanying carbon deprivation in cyanobacterium <i>Synechocystis</i> sp. PCC 6803	Steven C. Holland, Anthony D. Kappell, Anthony D. Kappell, Robert L. Burnap	C4/CAM and CO2 concentration mechanisms
88. Aidan Holohan	Systematic stomatal response strategies to elevated [CO2] concentrations under varying light regimes	Aidan Holohan, School of Biology and Environmental Science, University College Dublin; Christoph Müller, Institute of Plant Ecology, Justus-Liebig University, Giessen; Mike Jones, Department of Botany, School of Natural Sciences, Trinity College Dublin; Jennifer McElwain, School of Biology and Environmental Science, University College Dublin	Carbon for water
64. Ina Horst	C4- photosynthesis: A model system for signal integration on chromatin	Ina Horst, Leibniz University Hannover; Louisa Heimann, Leibniz University Hannover; Renke Perduns, Leibniz University Hannover; Sascha Offermann, Leibniz University Hannover; Christoph Peterhänsel, Leibniz University Hannover	C4/CAM and CO2 concentration mechanisms
248. Harvey J.M. Hou	Roles of Visible Light and UV Irradiations in Green Plant Spinach and Cyanobacterium <i>Acaryochloris marina</i>	Harvey J.M. Hou, Alabama State University	Water oxidation
295. Mir zaman Hussain	Photosynthetic performance of C4 maize and <i>Miscanthus</i> under extreme drought conditions in Midwest	Mir Zaman Hussain, University of Illinois, Carl Bernacchi- USDA ARS GCPRU, Marcelo Zeri- Centro de Ciência do Sistema Terrestre, Instituto Nacional de Pesquisas Espaciais, Cachoeira Paulista, SP, Brazil, Robert Nystrom, University of Illinois, Mike Masters, University of Illinois, Jesse Miller, University of Illinois, Andy VanLoocke, USDA ARS GCPRU, Evan DeLucia, University of Illinois	Photosynthesis and Bioenergy
22. Terashima Ichiro	Effects of artificial changes of the sink-source relationship by reciprocal grafting using leafy and radish cultivars of <i>Raphanus sativus</i> on photosynthesis and plant growth	Ichiro Terashima, Eriko Betsuyaku and Daisuke Sugiura The University of Tokyo, CREST	Photoassimilate use: transport and partitioning
249. Hiroshi Isobe	Magneto-Structural Correlations. I. Magnetic Interaction Parameters in the S2 state of the Oxygen-Evolving Complex in Photosystem II.	Hiroshi Isobe, Okayama University; Mitsuo Shoji, University of Tsukuba; Syusuke Yamanaka, Osaka University; Yasufumi Umena, Osaka City University; Keisuke Kawakami, Osaka City University; Nobuo Kamiya, Osaka City University; Jian-Ren Shen, Okayama University; Kizashi Yamaguchi, Osaka University	Water oxidation
12. Jiri Jablonsky	From genome-scale modeling to multi-scale kinetic model of carbon metabolism for cyanobacteria	Jiri Jablonsky, Institute of complex systems, University of South Bohemia in Ceske Budejovice FFPW, Czech Republic Martin Hagemann, Plant Physiology, Institute of Biological Sciences, University of Rostock, Germany	Regulation of the C3 carbon reduction cycle

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296. Martina Jokel	Relationship between flavodiiron proteins and hydrogen production in the green alga <i>Chlamydomonas reinhardtii</i>	Martina Jokel, Sergey Kosourov, Natalia Battchikova, Yagut Allahverdiyeva-Rinne, Eva-Mari Aro Department of Biochemistry and Food Chemistry, Molecular Plant Biology, University of Turku, FI-20014 Turku, Finland	Photosynthesis and Bioenergy
297. Toivo Kallas	Engineering of the 2-C-Methyl-D-Erythritol-4-Phosphate Pathway, Glycogen Synthesis, and Culture Strategies for Active Isoprenoid Production in Fast-Growing Cyanobacteria	Toivo Kallas, Univ. Wisconsin-Oshkosh, & Algoma Algal Biotechnology LLC Matthew Nelson, Univ. Wisconsin-Oshkosh, & Algoma Algal Biotechnology LLC Olalekan Aremu, Univ. Wisconsin-Oshkosh Brandon Thomas, Univ. Wisconsin-Oshkosh Brandon Brummeyer, Univ. Wisconsin-Oshkosh Andrea Felton, Univ. Wisconsin-Oshkosh Rhiannon Carr, Univ. Wisconsin-Oshkosh Shona Duncan, Univ. Wisconsin-Stevens Point Eric Singsaas, UW-Stevens Point, Wisconsin Inst. Sustainable Technology, & Algoma Algal Biotechnology LLC	Photosynthesis and Bioenergy
298. Joanna Kargul	Towards the H <sub>2</sub> -producing in vitro and solid-state systems using a highly robust photosystem I from a red alga <i>Cyanidioschyzon merolae</i>	Joanna Kargul, University of Warsaw; Tomasz Krupnik, University of Warsaw; Julian David Janna Olmos, University of Warsaw; Anita Jarzębińska, University of Warsaw; Ersan Harputlu, Mersin University; Kasim Ocakoglu, Mersin University	Photosynthesis and Bioenergy
250. Keisuke Kawakami	How iodine ions inhibit the oxygen evolution of photosystem II?	Keisuke Kawakami, The OCU Advanced Research Institute for Natural Science & Technology (OCARINA); Daisuke Hagiwara, Graduate School of Science, Osaka City University; Yasufumi Umena, The OCU Advanced Research Institute for Natural Science & Technology (OCARINA); Jian-Ren Shen, Graduate School of Natural Science and Technology, Okayama University; Nobuo Kamiya, The OCU Advanced Research Institute for Natural Science & Technology (OCARINA)	Water oxidation
252. Jan Kern	Taking Snapshots of Photosynthetic Water Oxidation - Simultaneous Femtosecond X-ray Spectroscopy and Diffraction at Room Temperature Using a X-ray Free Electron Laser	Jan Kern, LBL; Roberto Alonso-Mori, LCLS; Rosalie Tran, LBL; Johan Hattne, LBL; Richard J. Gildea, LBL; Nathaniel Echols, LBL; Carina Glöckner, TU Berlin; Julia Hellmich, TU Berlin; Hartawan Laksmono, PULSE; Raymond G. Sierra, PULSE; Sergey Koroidov, Umea Uni; Guangye Han, LBL; Michael J. Bogan, PULSE; Garth J. Williams, LCLS; Sébastien Boutet, LCLS; Nicholas K. Sauter, LBL; Johannes Messinger, Umea Uni; Athina Zouni, TU Berlin; Uwe Bergmann, LCLS; Vittal K. Yachandra, LBL; Junko Yano, LBL	Water oxidation
253. Sahr Khan	Investigation of the <sup>16</sup> O/ <sup>18</sup> O Isotope Effect of Oxygen Evolution Catalyzed by the [Mn(III/IV) <sub>2</sub> (O) <sub>2</sub> (terpy) <sub>2</sub> (OH) <sub>2</sub> ](NO <sub>3</sub> ) <sub>3</sub> Complex	Sahr Khan, Yale University; Mehmed Z. Ertem, Yale University; Rhitankar Pal, Yale University; Victor S. Batista, Yale University; Gary W. Brudvig, Yale University.	Water oxidation
65. Roxana Khoshravesh	A survey of structure and evolution of C <sub>4</sub> pathways in Camphorosmoideae, Chenopodiaceae.	Roxana Khoshravesh, University of Toronto; Hossein Akhiani, University of Tehran; Rowan F. Sage, University of Toronto; Tammy L. Sage, University of	C <sub>4</sub> /CAM and CO <sub>2</sub> concentration mechanisms



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254. Derrick Kolling	The Temperature Dependence of Photosystem II Water Oxidation and Photoassembly of the Oxygen-evolving Complex	James S. Board II (Marshall University); Derrick R.J. Kolling (Marshall University )	Water oxidation
13. Anagha Krishnan	Photosynthetic regulation of carbon fixation in a starchless mutant of <i>Chlamydomonas reinhardtii</i>	Anagha Krishnan, Rutgers, the State University of New Jersey; David Vinyard, Rutgers, the State University of New Jersey; G. KenchappaKumaraswamy ,Rutgers, the State University of New Jersey; Huiya Gu, Colorado School of Mines; Gennady Ananye, Rutgers, the State University of New Jersey; Matthew Posewitz, Colorado School of Mines; G. Charles Dismukes, Rutgers, the State University of New Jersey;	Regulation of the C3 carbon reduction cycle
255. Masami Kusunoki	Mono-manganese mechanism for water-splitting and oxygen-evolving reaction in photosystem II revisited after the 1.9 Å XRD structure.	Masami Kusunoki, Meiji University	Water oxidation
256. K. V. Lakshmi	The Mechanism of Solar Water Oxidation: A High-resolution Molecular and Electronic Structure of the Oxygen-Evolving Complex of Photosystem II	Lakshmi, K. V., Rensselaer Polytechnic Institute, Troy, NY 12180, USA Milikisiyants, S., Rensselaer Polytechnic Institute, Troy, NY 12180, USA Coates, C., Rensselaer Polytechnic Institute, Troy, NY 12180, USA Chatterjee, R., Rensselaer Polytechnic Institute, Troy, NY 12180, USA Koua, F., Okayama University, Okayama, Japan Shen, J-R., Okayama University, Okayama, Japan	Water oxidation
310. Jacob Lamb	Pili-mediated electron donation to iron oxides in <i>Synechocystis</i> sp. PCC 6803	Lamb JJ, Department of Biotechnology & CenTroN for Synthetic Biology, Norwegian University of Science and Technology, Trondheim, Norway Hill RE, Department of Biochemistry, University of Otago, Dunedin, New Zealand Eaton-Rye JJ, Department of Biochemistry, University of Otago, Dunedin, New Zealand Hohmann-Marriott MF, Department of Biotechnology & CenTroN for Synthetic Biology, Norwegian University of Science and Technology, Trondheim, Norway	Electron and proton transfer
89. Andrew Leakey	Have we been ignoring physiological plasticity and genetic variation in stomatal function as a significant source of error in models of water and carbon fluxes?	Kevin Wolz, University of Illinois at Urbana-Champaign; Mark Adorbo, University of Illinois at Urbana-Champaign; Timothy Wertin, University of Illinois at Urbana-Champaign; Andrew DB Leakey, University of Illinois at Urbana-Champaign.	Carbon for water
257. Ia Lee	Inhibition of oxygen evolution by fluoride in photosystem II lacking the PsbP and PsbQ subunits	Ia Lee, University of North Carolina Greensboro; Alice Haddy, University of North Carolina Greensboro	Water oxidation
23. Ziru Li	Roles of Starch and Sucrose Synthesis in Regulating Photosynthesis	Ziru Li, Michigan State University; Jennifer T. Yang, Michigan State University; Sean E. Weise, Michigan State University; Jeff A. Cruz, Michigan State University; David M. Kramer, Michigan State University; Thomas D. Sharkey, Michigan State University	Photoassimilate use: transport and partitioning

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66. Yuanyuan Li	Is low CO <sub>2</sub> a drive force for C <sub>4</sub> plant evolution?	Yuanyuan Li, PICB, SIBS, Chinese Academy of Sciences; Jiajia Xu, PICB, SIBS, Chinese Academy of Sciences; Hui Zhang, 1 PICB, SIBS, Chinese Academy of Sciences; 2 Key Lab of Plant Stress Research, Shandong Normal University, Jinan, Shandong, China Xin-Guang Zhu, PICB, SIBS, Chinese Academy of Sciences	C <sub>4</sub> /CAM and CO <sub>2</sub> concentration mechanisms
194. Zhirong Li	Identifying a novel type of violaxanthin de-epoxidase from <i>Chlamydomonas reinhardtii</i>	Zhirong Li, Rachel M. Dent, Graham Peers, Wiebke Apel, Scarlett Yang, and Krishna K. Niyogi Howard Hughes Medical Institute, Department of Plant and Microbial Biology, University of California, Berkeley, CA 94720-3102; and Physical Biosciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720-3102, USA.	Carotenoids
14. Deng Liu	Regulon Reconstruction of a Nitrogen-regulated Response Regulator, NrrA in Cyanobacteria	Deng Liu, Institute of Plant Physiology and Ecology, Chinese Academy of Sciences	Regulation of the C <sub>3</sub> carbon reduction cycle
90. Anna Locke	Soybean leaf hydraulic conductance shows mid-day depression in conjunction with leaf water potential decrease and differential aquaporin gene expression	Anna M. Locke, University of Illinois at Urbana-Champaign; Donald R. Ort, USDA-ARS and University of Illinois at Urbana-Champaign	Carbon for water
15. Patricia Lopez-Calcano	Analysis of insertion mutants and construction of transgenic plants for the investigation of the CP12 protein family in <i>Arabidopsis thaliana</i>	Patricia Lopez-Calcano, Christine A. Raines & Tracy Lawson, University of Essex.	Regulation of the C <sub>3</sub> carbon reduction cycle
67. mingju lu	RNA-Seq shed light on the phylogeny of the genus <i>Flaveria</i>	Ming-Ju Lu and Xin-Guang Zhu, CAS-MPG Partner Institute and Key Laboratory for Computational Biology Shanghai Institutes for Biological Sciences, Shanghai, China Udo Gowik and Peter Westhoff, Institute of Plant Molecular and Developmental Biology, Heinrich-Heine-University, Duesseldorf, Germany Rowan F. Sage, Department of Ecology and Evolutionary Biology, University of Toronto, Toronto, Canada	C <sub>4</sub> /CAM and CO <sub>2</sub> concentration mechanisms
258. Wolfgang Lubitz	The net oxidation state and electronic structure of the S <sub>3</sub> state of the oxygen evolving complex (OEC) of Photosystem II	Alain Boussac, iBiTec-S; Wolfgang Lubitz, Max Planck Institute for Chemical Energy Conversion; Nicholas Cox, Max Planck Institute for Chemical Energy Conversion	Water oxidation
68. ben lucker	Regulation of Cyclic Electron Flow in <i>Chlamydomonas reinhardtii</i> Under Fluctuating Carbon Availability	Ben Lucker <sup>1</sup> , David M. Kramer <sup>1</sup> <sup>1</sup> Plant Research Laboratory, S222 Plant Biology Building, Michigan State University, East Lansing, MI 48824-1312, USA	C <sub>4</sub> /CAM and CO <sub>2</sub> concentration mechanisms
195. Nikki Magdaong	Ultrafast time-resolved spectroscopic investigation of peridinin having different extents of $\pi$ -electron conjugation	Nikki M. Magdaong, University of Connecticut; Dariusz M. Niedzwiedzki, PARC- Washington University; Hongbin Liu, University of Connecticut; Jordan Greco, University of Connecticut; Shigeo Katsumura, Kwansai Gakuin University; Robert R. Birge, University of Connecticut; Harry A. Frank, University of Connecticut	Carotenoids

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299. Fikret Mamedov	Photosynthetic hydrogen production in sulfur deprived <i>Chlamydomonas reinhardtii</i>	Fikret Mamedov <sup>1</sup> , Stenbjorn Styring <sup>1</sup> and Alena Volgusheva <sup>2</sup> <sup>1</sup> Department of Chemistry – Angstrom Laboratory, Box 523 Uppsala University, 751 20 Uppsala, Sweden <sup>2</sup> Department of Biophysics, Faculty of Biology, Moscow State University, 119 991 Moscow, Russia	Photosynthesis and Bioenergy
300. Hans C.P. Matthijs	Tuning light energy economy in LED driven photosynthesis of <i>Synechocystis</i>	J. Merijn Schuurmans & Hans C.P. Matthijs, University of Amsterdam, The Netherlands	Photosynthesis and Bioenergy
202. Michael McConnell	Purification and photobiochemical profile of the photosystem reaction center from the oleaginous alga, <i>Nannochloropsis gaditana</i> .	Michael D. McConnell, David Lowry and Kevin E. Redding, Arizona State University	Reaction center function
134. NAGESWARA Rao MEKALA	LHCII dephosphorylation prevents concomitant phosphorylation of PSII and LHCII proteins and disorganization of the thylakoid membrane under high light	Nageswara Rao Mekala, Mikko Tikkanen and Eva-Mari Aro University of Turku	Light harvesting
301. Anastasios Melis	Photosynthesis-to-Fuels: Monoterpene ( $\beta$ -phellandrene) hydrocarbons production in cyanobacteria	Anastasios Melis, University of California, Berkeley; Fiona K. Bentley, University of California, Berkeley; Jose Gines Garcia-Cerdán, University of California, Berkeley; Hsu-Ching Chen, University of California, Berkeley.	Photosynthesis and Bioenergy
94. Alberto Mezzetti	Effect of dehydration on electron transfer reactions in photosynthetic reaction centers: a combined time-resolved differential FTIR and UV-Vis study	Alberto Mezzetti, CEA-Saclay, France and University Lille 1, France; Marco Malferrari, University of Bologna, Italy; Francesco Francia, University of Bologna, Italy; Winfried Leibl, CEA-Saclay, France; Giovanni Venturoli, University of Bologna, Italy;	Electron and proton transfer
196. Hualing Mi	The role of rice carotenoid isomerase in the photosynthesis	Hualing Mi, National Laboratory of Plant Institutes Molecular Genetics, Institute of Plant Physiology and Ecology, Shanghai Institutes for Biological Science, CAS,	Carotenoids
197. Fátima Miguez	WHAT DETERMINES THE ACTIVATION OF PHOTOPROTECTIVE WINTER PHOTOINHIBITION?: A META-ANALYTIC STUDY	Fátima Míguez, University of Basque Country; Ander de la Fuente, University of Basque Country; Beatriz Fernández-Marín, University of Basque Country; José María Becerril, University of Basque Country; José Ignacio García-Plazaola University of Basque Country.	Carotenoids
24. Matthew Miller	Dynamic acclimation of photosynthesis to high light in <i>Arabidopsis thaliana</i>	Matthew Miller, University of Manchester; Giles Johnson, University of Manchester	Photoassimilate use: transport and partitioning
135. Mautusi Mitra	Characterization of two <i>Chlamydomonas reinhardtii</i> mutants defective in chlorophyll biosynthesis	Mautusi Mitra, University of West Georgia; Phillip B Grovenstein, University of West Georgia; Darryel A Wilson, University of West Georgia; Kathryn D Lankford, University of West Georgia; Cameron G Lennox, University of West Georgia; Katherine P Smith, University of West Georgia; Pawel Brzezowski, Humboldt University, Berlin; Bernhard Grimm, Humboldt University, Berlin; Tashana C Haye, University of West Georgia; and Kelsey A Gaston, University of West Georgia	Light harvesting
203. Kazunori Miyata	Photo-reactivation of the chilling-inactivated Mn cluster in <i>Cucumis sativus</i> L. leaves.	Kazunori Miyata, The university of Tokyo; Ichiro Terashima The university of Tokyo	Reaction center function

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91. Yusuke Mizokami	Responses of gs and gm to water stress and changes in CO2 concentration	Yusuke Mizokami, The University of Tokyo; Kojima Mikiko, RIKEN; Hitoshi Sakakibara, RIKEN; Ko Noguchi, The University of Tokyo; Ichiro Terashima, The University of Tokyo.	Carbon for water
204. Fredrik Møkvist	The far-red limit of Photosynthesis - phenomena and mechanisms	Fredrik Møkvist, Uppsala University; Anders Thapper, Uppsala University; Fikret Mamedov, Uppsala University; Stenbjörn Styring, Uppsala University.	Reaction center function
69. Jonathan Moore	Regulation of Photosynthesis in Epiphytic Bromeliaceae	Jonathan Moore, Plant Dynamics and Wageningen University; Sander Pot, Plant Dynamics; Jeremy Harbinson, Wageningen University	C4/CAM and CO2 concentration mechanisms
136. Tomas Morosinotto	Characterization Of The Photosynthetic Apparatus from the Eustigmatophyceae Nannochloropsis gaditana: Evidences of Convergent Evolution in Photosystem I Supramolecular Organization.	Stefania Basso, Diana Simionato, Caterina Gerotto, Anna Segalla, Giorgio M. Giacometti and Tomas Morosinotto, from University of Padova (Italy)	Light harvesting
137. David Mothersole	LhaA, an essential protein required for efficient assembly of the core complex in purple bacteria	David J. Mothersole, University of Sheffield; Philip J. Jackson, University of Sheffield; John D Olsen, University of Sheffield; C. Neil Hunter, University of Sheffield.	Light harvesting
138. Lars Mueller	Dynamic Monte-Carlo Simulation of Charge and Exciton Transfer Kinetics in Proteins	Lars Mueller, University of Bayreuth; G. Matthias Ullmann, University of Bayreuth	Light harvesting
139. Frank Müh	Progress in the Structure-based Simulation of Plant Light-Harvesting Complexes	Frank Müh, Dominik Lindorfer, Marcel Schmidt am Busch, Thomas Renger; Johannes Kepler University Linz, Institute for Theoretical Physics, Altenberger Str. 69, 4040 Linz, Austria	Light harvesting
95. Paula Mulo	Function and sub-chloroplastic location of ferredoxin-NADP+ oxidoreductase isoforms in Arabidopsis thaliana	Paula Mulo, University of Turku; Minna Lintala, University of Turku; Nina Lehtimäki, University of Turku; Natalie Schuck, Ludwig-Maximilians-Universität München; Minna Koskela, University of Turku; Ilaf Bilal, University of Turku; J. Philipp Benz, Ludwig-Maximilians-Universität München; Jürgen Soll, Ludwig-Maximilians-Universität München; Bettina Bölter, Ludwig-Maximilians-Universität München	Electron and proton transfer
140. Rachel Mulvaney	Shedding light on monomeric core complexes from purple photosynthetic bacteria	Rachel Mulvaney, University of Glasgow; Aleksander Roszak, University of Glasgow; Sarah Henry, University of Glasgow, June Southall, University of Glasgow; Philip Jackson, University of Sheffield, C Neil Hunter, University of Sheffield; Richard Cogdell, University of Glasgow	Light harvesting
70. Masayuki Muramatsu	Comparison of five plant-type phosphoenolpyruvate carboxylases from rice and identification of amino acid residues involved in the substrate affinity	Masayuki Muramatsu, Functional Plant Research Unit, National Institute of Agrobiological Sciences (NIAS); Rintaro Suzuki, Biomolecular Research Unit, National Institute of Agrobiological Sciences (NIAS); Toshimasa Yamazaki, Biomolecular Research Unit, National Institute of Agrobiological Sciences (NIAS); Mitsue Miyao, Functional Plant Research Unit, National Institute of Agrobiological Sciences (NIAS)	C4/CAM and CO2 concentration mechanisms

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16. James W Murray	Structural Basis of Calvin Cycle Regulation	James W. Murray, Imperial College; Charles A. R. Cotton, Imperial College	Regulation of the C3 carbon reduction cycle
141. Jan H. Mussgnug	Characterization of the unique major light-harvesting complex protein LHCBM9 of <i>Chlamydomonas reinhardtii</i>	Sabrina Grewe, Bielefeld University Matteo Ballottari, Università di Verona Anja Doebbe, Bielefeld University Jan H. Mussgnug, Bielefeld University Ben Hankamer, The University of Queensland Roberto Bassi, Università di Verona Olaf Kruse, Bielefeld University	Light harvesting
96. Henna Mustila	Flavodiiron proteins Flv1 and Flv3 are essential for cyanobacterial growth under fluctuating light	Henna Mustila, University of Turku; Yagut Allahverdiyeva, University of Turku; Maria Ermakova, University of Turku; Luca Bersanini, University of Turku; Natalia Battchikova, University of Turku; Laurent Cournac, Aix Marseille Université, Eva-Mari Aro, University of Turku	Electron and proton transfer
259. Ryo Nagao	FTIR study on the interactions of the extrinsic proteins with the water-oxidizing center in cyanobacterial photosystem II: Evolutionary aspect of the functions of the extrinsic proteins	Ryo Nagao, Nagoya University; Hanayo Ueoka-Nakanishi, Nagoya University; Chihiro Uno, Nagoya University; Tatsuya Tomo, Tokyo University of Science; Takumi Noguchi, Nagoya University	Water oxidation
142. Aparna Nagarajan	Effects of Antenna Truncation on the Productivity and Photosystem II in the cyanobacterium <i>Synechocystis</i> sp. PCC 6803	Lawrence E. Page, Washington University St. Louis, Current address, Terra Biologics, St. Louis; Aparna Nagarajan, Washington University St. Louis; Michelle Liberton, Washington University St. Louis; Himadri B. Pakrasi, Washington University St. Louis.	Light harvesting
205. Kenji Nagashima	Exchange and complementation of genes coding for photosynthetic reaction center core subunits among purple bacteria	Kenji V. P. Nagashima, Kanagawa University/JST; Naoki Fusada, Kanagawa University; Sakiko Nagashima, Kanagawa University; Kazuhito Inoue, Kanagawa University	Reaction center function
260. Hiroki Nagashima	Protonation state of Mn cluster in Photosystem II revealed by highly resolved proton matrix ENDOR	Hiroki Nagashima, Nagoya University; Hiroyuki Mino, Nagoya University;	Water oxidation
143. Gergely Nagy	Reorganizations in the ultrastructure of the thylakoid membranes of <i>Chlamydomonas reinhardtii</i> cells upon state transitions	Gergely Nagy, Paul Scherrer Institute, Villigen, Switzerland; Renáta Ünnepe, Wigner Research Centre for Physics, HAS, Budapest, Hungary; Ottó Zsiros, Biological Research Center, HAS, Szeged, Hungary; Kenji Takizawa, National Institute for Basic Biology, Okazaki, Japan; Lionel Porcar, Institut Laue-Langevin, Grenoble, France; Giovanni Finazzi, CEA, Grenoble, France; Jun Minagawa, National Institute for Basic Biology, Okazaki, Japan; Győző Garab, Biological Research Center, HAS, Szeged, Hungary	Light harvesting
71. Yuri Nakajima Munekage	Analysis of co-segregation between expression of PEPC and genotype of PEPC promoter in F2 progenies of hybrids between C3-C4 intermediate <i>Flaveria floridana</i> and C4-like <i>Flaveria brownii</i>	Yuri Nakajima Munekage, Nara Institute of Science and Technology; Jun Yoshimura, Nara Institute of Science and Technology; Shio Inoue, Nara Institute of Science and Technology; Risa Kishizaki, Nara Institute of Science and Technology; Akiho Yokota, Nara Institute of Science and Technology	C4/CAM and CO2 concentration mechanisms

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97. Naoya Nakamura	Promotion of cyclic electron transport around photosystem I during the evolution of NADP-malic enzyme type C4 photosynthesis in the genus <i>Flaveria</i>	Naoya Nakamura, Nara Institute of Science and Technology; Megumi Iwano, Nara Institute of Science and Technology; Michel Havaux, CEA Cadarache; Akiho Yokota, Nara Institute of Science and Technology; Yuri Nakajima Munekage, Nara Institute of Science and Technology	Electron and proton transfer
144. Keisuke Namie	Application of the home-built cryogenic microspectroscopy system with numerical aperture of 0.9 to photosynthetic organisms	Keisuke Namie, Tohoku University; Tomohumi Chiba, Tohoku University; Mizu Kajihara, Tohoku University; Wataru Kato, Nagoya University; Hiroshi Fukumura, Tohoku University; Yutaka Shibata, Tohoku University	Light harvesting
206. Daniele Narzi	Spin Surfaces in the S2 State of the Oxygen-Evolving Complex of Photosystem II	Daniele Narzi, Dept. of Physics, Sapienza - University of Rome, Italy. Daniele Bovi, Dept. of Physics, Sapienza - University of Rome, Italy. Leonardo Guidoni, Dept. of Physical and Chemical Sciences, University of L'Aquila, Italy; Dept. of Physics, Sapienza - University of Rome, Italy.	Reaction center function
145. Alberto Natali	Light Harvesting complexes in <i>Chlamydomonas reinhardtii</i> : supramolecular organization and biochemical characterization.	Alberto Natali, VU University Amsterdam; Bartłomiej Drop, VU University Amsterdam; Miriam Webber-Birugi, University of Groningen; Sathish Yadav, University of Groningen; Alicja Filipowicz-Szymanska, University of Groningen; Fabrizia Fusetti, University of Groningen; Egbert J. Boekema, University of Groningen; Roberta Croce, VU University Amsterdam	Light harvesting
98. Wojciech Jacek Nawrocki	Chlororespiratory electron flow in <i>Chlamydomonas chloroplasts</i>	Wojciech Jacek Nawrocki, Laura Houille-Vernes, Fabrice Rappaport, Francis-André Wollman, Institut de Biologie Physico-Chimique, Paris;	Electron and proton transfer
146. Sangeeta Negi	The blue light photoreceptor phototropin regulates growth and photosynthetic responses in <i>Chlamydomonas reinhardtii</i>	Sangeeta Negi <sup>1</sup> , Peter Hegemann <sup>2</sup> , and Richard Sayre <sup>1,3</sup> <sup>1</sup> New Mexico Consortium, Los Alamos NM, <sup>2</sup> Humboldt University, Berlin, Germany; <sup>3</sup> Los Alamos National Laboratory, Los Alamos, NM	Light harvesting
145. Christian Negre	Molecular rectification: Its relationship with interfacial electron transfer process in photocatalysis	Christian F. A. Negre [1;2], Wendu Ding [1;2], Julio Palma [2], Laura J. Allen [2], Karin J. Young [1;2], Rebecca L. Milot [2], Alec C. Durrell [1;2], Charles A. Schmuttenmaer [1;2], Gary W. Brudvig [1;2], Robert H. Crabtree [1;2], and Victor S. Batista[1;2] [1] Energy Sciences Institute, Yale University, P.O. Box 27394, West Haven, CT 06516-7394 [2] Department of Chemistry, Yale University, P.O. Box 208107, New Haven, CT 06520-8107	Light harvesting
148. Jonathan Neilson	The photosynthetic machinery of the chlorarachniophyte <i>Bigelowiella natans</i>	Jonathan Neilson, Dion Durnford, University of New Brunswick	Light harvesting
203. Nathan Nelson	Crystal structure of <i>Synechocystis</i> mutants and plant Photosystem I	Nathan Nelson Department of Biochemistry and Molecular Biology, The George S. Wise Faculty of Life Sciences, Tel Aviv University, Tel Aviv, 69978, Israel	Reaction center function
149. Dariusz Niedzwiedzki	Excited State Properties of Chlorophyll f in Solvents at Ambient and Cryogenic Temperatures	Dariusz M. Niedzwiedzki, Washington University in St. Louis, MO, USA Haijun Liu, Washington University in St. Louis, MO, USA Min Chen, University of Sydney, Australia Robert E. Blankenship, Washington University in St. Louis, MO, USA	Light harvesting

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150. Jon Nield	Single particle image analysis on the reversible states of phytochrome Agp1 in <i>Agrobacterium tumefaciens</i>	Kristina Zubow, Queen Mary University of London, UK Soshichiro Nagano, Queen Mary University of London, UK Patrick Scheerer, Charité-University Medicine Berlin, Germany Katsuhiko Inomata, Kanazawa University, Japan Tilman Lamparter, Karlsruher Institute für Technologie, Germany Norbert Krauß, Queen Mary University of London, UK Jon Nield, Queen Mary University of London, UK	Light harvesting
261. Håkan Nilsson	Substrate Water Exchange in the S3YZ-dot state	Håkan Nilsson, Department of Chemistry, Umeå University, Sweden. Fabrice Rappaport, Institut de Biologie Physico-Chimique, UMR 7141 CNRS and Université Pierre et Marie Curie, 13 rue Pierre et Marie Curie, 75005 Paris, France. Alain Boussac, iBiTec-S, CNRS UMR 8221, CEA Saclay, 91191 Gif-sur-Yvette, France. Johannes Messinger, Department of Chemistry, Umeå University, Sweden.	Water oxidation
208. Taishi Nishimura	Interaction of the PsbP protein in higher plant PSII complex	Taishi Nishimura, Kyoto University; Mizue Asada, Nagoya University; Kunio Ido, Kyoto University; Hiroyuki Mino, Nagoya University; Fumihiko Sato, Kyoto University; Kentaro Ifuku, Kyoto University	Reaction center function
262. Tomoyasu Noji	Durability of Oxygen Evolution of Photosystem II Incorporated into Lipid Bilayers	Tomoyasu Noji, Nagoya Institute of Technology; Masaharu Kondo, Nagoya Institute of Technology; Keisuke Kawakami, Osaka City University; Jian-ren Shen, Okayama University; Mamoru Nango, Osaka City University; Takehisa Dewa, Nagoya Institute of Technology	Water oxidation
99. Markus Nurmi	Calcium sensing receptor CaS – a regulatory link between the light and carbon reduction reactions?	Markus Nurmi, University of Turku; Saijaliisa Kangasjärvi, University of Turku; Meike Hüdig, University of Münster; Sari Järvi, University of Turku; Marjaana Suorsa, University of Turku; Irina Grouneva, University of Turku; Mikko Tikkanen, University of Turku; Stefan Weinl, University of Münster; Eva-Mari Aro, University of Turku	Electron and proton transfer
5. Kerry O'Donnelly	Rubisco: Enhancing photosynthetic efficiency through novel CO2 concentrating mechanism	Kerry O'Donnelly, Imperial College London	Learning from CO2 concentrating mechanisms for increasing productivity
263. Patrick O'Malley	Density functional studies on the geometric and electronic structures of the water oxidation intermediates in Photosystem II.	Eduardo de Almeida and Patrick J O'Malley School of Chemistry The University of Manchester Oxford Road Manchester M13 9PL UK	Water oxidation
6. Alessandro Occhialini	Exploiting a cyanobacterial CO2 concentrating mechanism to improve plant photosynthetic efficiency	Alessandro Occhialini (1), John P. Andralojc (1), Jean Devonshire (1), Myat Lin (2), Maureen R. Hanson (2) and Martin A. J. Parry (1). (1) Plant Biology and Crop Science, Rothamsted Research, Harpenden, Herts, AL5 2JQ, UK. (2) Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY 14853 USA.	Learning from CO2 concentrating mechanisms for increasing productivity
302. Melanie Oey	RNAi Knock-Down of LHCBM1, 2 and 3 Increases Photosynthetic H2 Production Efficiency of the Green Alga <i>Chlamydomonas reinhardtii</i>	Melanie Oey, The University of Queensland, Institute for Molecular Bioscience Ian L. Ross, The University of Queensland, Institute for Molecular Bioscience Evan Stephens, The University of Queensland, Institute for Molecular Bioscience Juliane Wolf, The University of Queensland, Institute for Molecular Bioscience Ben Hankamer, The University of Queensland, Institute for Molecular Bioscience	Photosynthesis and Bioenergy

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72. Sascha Offermann	Large-scale determination of subcellular protein localization in the single-Cell C4 species <i>Bienertia sinuspersici</i> reveals key elements that are conserved between different structural and biochemical types of C4 photosynthesis.	Sascha Offermann <sup>1</sup> , Giulia Friso <sup>2</sup> , Klaas van Wijk <sup>2</sup> , Qi Sun <sup>3</sup> , Kelly A. Doroshenko <sup>4</sup> , Thomas W. Okita <sup>4</sup> , Rick M. Sharpe <sup>5</sup> and Gerald E. Edwards <sup>5</sup> <sup>1</sup> Institute for Botany, Leibniz University Hannover, Germany <sup>2</sup> Department of Plant Biology, Cornell University, NY, USA <sup>3</sup> Computational Biology Service Unit, Cornell University, NY, USA <sup>4</sup> Institute of Biological Chemistry, Washington State University, WA, USA <sup>5</sup> School of Biological Sciences, Washington State University, WA, USA	C4/CAM and CO2 concentration mechanisms
28. Riichi Oguchi	Adaptation of cotton bracts to a micro-environment of concentrated CO2 produced by rapid fruit respiration	Yuan-Yuan Hu, Shihezi University; Riichi Oguchi, Tohoku University; Wataru Yamori, Chiba University; Susanne von Caemmerer, Australian National University; Wah Soon Chow, Australian National University; and Wang-Feng Zhang, Shihezi University	Photosynthesis in a changing global environment
264. Tien Olson	Enzymatic activity of a Mn-binding peptide	Tien Olson, Arizona State University, Selva Edwardraja, Arizona State University; Marco Flores, Arizona State University; Giovanna Ghirlanda, Arizona State University; James P. Allen, Arizona State University.	Water oxidation
151. Gregory Orf	Development of a System for Heterologous Expression of the Fenna-Matthews-Olson Protein from Green Sulfur Bacteria	Gregory S. Orf, Washington University in St. Louis; Brandon Chang, Washington University in St. Louis; Duo Xu, Washington University in St. Louis; Robert E. Blankenship, Washington University in St. Louis	Light harvesting
29. Diego Ortiz	Genotypic variability in fluorescence response to cold and drought stress in sorghum	Diego Ortiz, Iowa State University; Maria G. Salas-Fernandez, Iowa State University	Photosynthesis in a changing global environment
100. Elisabeth Ostendorf	The chloroplast ATP Synthase controls chloroplast redox homeostasis and thylakoid protein interactions	Elisabeth Ostendorf, Michigan State University; Atsuko Kanazawa, Michigan State University; Mio Cruz, Michigan State University; Kaori Kohzuma, Michigan State University; David M. Kramer, Michigan State University	Electron and proton transfer
198. Evgeny Ostroumov	Optically forbidden transitions in carotenoids studied by 2D electronic spectroscopy	Evgeny. E. Ostroumov, Department of Chemistry, University of Toronto, 80 St. George Street, Toronto, On M5S 3H6, Canada Rachel M. Mulvaney, Glasgow Biomedical Research Centre, IBLS, University of Glasgow, 126 Place, Glasgow G12 8TA, Scotland, UK Richard J. Cogdell, Glasgow Biomedical Research Centre, IBLS, University of Glasgow, 126 Place, Glasgow G12 8TA, Scotland, UK Gregory D. Scholes, Department of Chemistry, University of Toronto, 80 St. George Street, Toronto, On M5S 3H6, Canada	Carotenoids
30. Isik Ozturk	The effect of climate change on productivity of winter wheat in Denmark: a hundred year projection	Isik Ozturk, Aarhus University; Yubaraj k. Karki, Aarhus University; Jørgen E. Olesen, Aarhus University	Photosynthesis in a changing global environment
209. Rhitankar Pal	Combined QM/MM and EXAFS Study of the S0 State of Photosystem-II	Rhitankar Pal, Christian F. A. Negre, Sandra Luber, Ravi Pokhrel, Leslie Vogt, Mehmed Z. Ertem, Gary W. Brudvig*, Victor S. Batista* Yale University, New Haven, CT-06511	Reaction center function



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152. Anjali Pandit	An NMR comparison of LHCII in active and photoprotective states reveals subtle changes in the chlorophyll a ground-state electronic structures	Anjali Pandit, VU University Michael Reus, Max-Planck-Institute for Chemical Energy Conversion Tomas Morosinotto, University of Padova Roberto Bassi, University of Verona Alfred Holzwarth, Max-Planck-Institute for Chemical Energy Conversion	Light harvesting
303. Bibin Paulose	Expression of algal bicarbonate transporters improves the efficiency of carbon fixation in plants.	Bibin Paulose, Lindsey Hoffmann, Julian Chalek, Michelle DaCosta, Danny Schnell University of Massachusetts, Amherst.	Photosynthesis and Bioenergy
153. Lazar Pavlovic	Dynamics of chloroplast proton motive force (pmf) partitioning in Arabidopsis	Lazar Pavlovic, Heinrich Heine Universität Düsseldorf; Peter Jahns, Heinrich Heine Universität Düsseldorf	Light harvesting
154. Xu Pengqi	Is CP24 the site of zeaxanthin-dependent quenching?	Pengqi Xu, Department of Physics and Astronomy, Faculty of Sciences, VU University; Roberta Croce, Department of Physics and Astronomy, Faculty of Sciences, VU University	Light harvesting
265. MONTSERRAT PEREZ-NAVARRO	Ammonia Binding to the Oxygen-Evolving Complex of Photosystem II Identifies the Solvent-Exchangeable $\mu$ -oxo Bridge of the Manganese Tetramer	Montserrat Pérez-Navarro, William M. Ames, Thomas Lohmiller, Dimitrios A. Pantazis, Leonid Rapatskiy, Frank Neese, Wolfgang Lubitz and Nicholas Cox, Max-Planck-Institut für Chemische Energiekonversion, Mülheim an der Ruhr, Germany; Håkan Nilsson and Johannes Messinger, Umeå University; Marc M. Nowaczyk, Ruhr-Universität Bochum; Alain Boussac, CEA Saclay;	Water oxidation
101. Dimitris Petroutsos	Calcium-dependent regulation of cyclic photosynthetic electron transfer by a CAS, ANR1 and PGRL1 complex	Dimitris Petroutsos (2), Mia Terashima (1), Meike Hüdig (1), Irina Tolstygina (1), Kerstin Trompelt (1), Philipp Gäbelein (1), Jörg Kudla (1), Stefan Weigl (1), Giovanni Finazzi (2) and Michael Hippler (1) (1) Institute of Plant Biology and Biotechnology, University of Münster, Hindenburgplatz 55 and Schlossplatz 4, 48143 Münster, Germany; (2) Centre National Recherche Scientifique, Unité Mixte Recherche 5168, Laboratoire Physiologie Cellulaire et Végétale, F-38054 Grenoble, France.	Electron and proton transfer
155. Malgorzata Pietrzykowska	A crucial role for P-Lhcb2 in state transitions	Malgorzata Pietrzykowska, Umeå University, Umeå, Sweden Marjaana Suorsa, University of Turku, Turku, Finland; Dmitry A. Semchonok, University of Groningen, Groningen, The Netherlands; Mikko Tikkanen, University of Turku, Turku, Finland; Anett Z. Kiss, Umeå University, Umeå, Sweden; Egbert J. Boekema, University of Groningen, Groningen, The Netherlands; Eva-Mari Aro, University of Turku, Turku, Finland; Stefan Jansson, Umeå University, Umeå, Sweden	Light harvesting

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53. Carlos Pimentel	In vivo temperature limitations of photosynthesis in <i>Phaseolus vulgaris</i> L.	Carlos Pimentel <sup>1</sup> ; Rafael V. Ribeiro <sup>2</sup> ; Eduardo C. Machado <sup>2</sup> ; Mauro G. dos Santos <sup>3</sup> ; Ricardo F. de Oliveira <sup>4</sup> . 1Departamento de Fitotecnia, I. A., UFRuralRJ, CEP 23851-970, Seropédica, RJ, Brasil, e-mail: greenman@amcham.com.br; 2Laboratório de Fisiologia Vegetal, CP 28, IAC, CEP 13020-902, Campinas, SP, Brasil; 3Departamento de Botânica, UFPe, 50670-901, Recife, PE, Brasil; 4Departamento de Ciências Biológicas, CP 09, ESALQ-USP, CEP 13419-110, Piracicaba, SP, Brasil.	Photosynthesis in a changing global environment
156. Alberta Pinnola	A new unrecognized binding site on LHCSR proteins explains Enhanced Zeaxanthin-dependence of excess energy dissipation in <i>Physcomitrella patens</i>	Alberta Pinnola University of Verona; Luca Dall'Osto University of Verona; Caterina Gerotto University of Padua; Tomas Morosinotto University of Padua; Roberto Bassi University of Verona; Alessandro Alboresi, University of Verona;	Light harvesting
266. Ravi Pokhrel	Mutations of Second Shell Residues Near the OEC of PSII Alter Chloride Binding, Proton Transport, and the Kinetics of Oxygen Release.	Ravi Pokhrel, Yale University; Rachel J. Service, University of California, Riverside; Richard J. Debus, University of California, Riverside; Gary W. Brudvig, Yale University.	Water oxidation
210. Oleg Poluektov	Directionality of Electron Transfer in Type I Reaction Center Proteins	Oleg G. Poluektov, Lisa M. Utschig, and David M. Tiede Chemical Sciences and Engineering Division, Argonne National Laboratory, Argonne, IL 60439	Reaction center function
157. Iryna Polukhina	What triggers qE component of non-photochemical quenching in the green alga <i>Chlamydomonas reinhardtii</i> ?	Iryna Polukhina, VU University Amsterdam	Light harvesting
211. Roshan Sharma Poudyal	Loss-of-function of OsSTN8 suppresses the photosystem (PS) II core protein phosphorylation and interferes with PSII repair mechanism in rice ( <i>Oryza sativa</i> )	Roshan Sharma Poudyal <sup>1*</sup> , Krishna Nath <sup>1,4</sup> , Joon-Seob Eom <sup>2</sup> , Yu Shin Park <sup>3</sup> , Ismayil S. Zulfugarov <sup>1</sup> , Altanzaya Tovuu <sup>1</sup> , Nayeoon Ryoo <sup>2</sup> , Hong Gil Nam <sup>4</sup> , Gynheung An <sup>2</sup> , Jong-Seong Jeon <sup>2</sup> and Choon-Hwan Lee <sup>1*</sup> 1Department of Molecular Biology, Pusan National University, Busan, Korea, 2Crop Biotech Institute and Graduate School of Biotechnology, Kyung Hee University, Yongin, Korea, 3Center for Core Research Facilities, DGIST, Daegu, Korea, 4Major in New Biology, DGIST, Daegu, Korea	Reaction center function
158. Jakub Psencik	Structural and functional roles of carotenoids in chlorosomes	Jakub Psencik, Charles University in Prague; Juan B. Arellano, Instituto de Recursos Naturales y Agrobiología de Salamanca (IRNASA-CSIC); Aaron M. Collins, Washington University in St. Louis; Pasi Laurinmaki, University of Helsinki; Miika Torkkeli, University of Helsinki; Benita Loflund, University of Helsinki; Ritva E. Serimaa, University of Helsinki; Robert E. Blankenship, Washington University in St. Louis; Roman Tuma, University of Leeds, Leeds, U.K.; Sarah J. Butcher, University of Helsinki;	Light harvesting

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267. Yulia Pushkar	Time resolved X-ray Emission Spectroscopy for Analysis of Natural and Artificial Photosynthesis	Yulia Pushkar Department of Physics Purdue University West Lafayette, IN 47907	Water oxidation
31. Agepati S. Raghavendra	Additional strategies of plants, involving mitochondria and cytoplasm to sustain photosynthesis at high light: Responses of three Arabidopsis mutants deficient in ascorbate, mitochondrial alternative oxidase and chloroplastic NADP malate dehydrogenase	Sai K. Talla <sup>1</sup> , Bobba Sunil <sup>1</sup> , Renate Scheibe <sup>2</sup> and Agepati S. Raghavendra <sup>1</sup> <sup>1</sup> Department of Plant Sciences, School of Life Sciences, University of Hyderabad, Hyderabad, India, and <sup>2</sup> Lehrstuhl Pflanzenphysiologie, Fachbereich Biologie/Chemie, Universität Osnabrück, Osnabrück, Germany	Photosynthesis in a changing global environment
159. Charusheela Ramanan	Fluorescence Characterization of LHCII Monomers with Site Specific Mutation at the Lowest Energy Cluster	Charusheela Ramanan, VU University Amsterdam; Marco Negretti, VU University Amsterdam; Michael Gruber, VU University Amsterdam; Roberta Croce, VU University Amsterdam; Rienk van Grondelle, VU University Amsterdam	Light harvesting
160. Olga Rancova	Static and dynamic disorder of LH2 complexes revealed by simulations of two-dimensional spectroscopy	Olga Rancova, Vilnius University, Lithuania; Darius Abramavicius, Vilnius University, Lithuania	Light harvesting
102. Marjaana Rantala	Dissecting the unique roles of the two PsbO isoforms in Arabidopsis thaliana	Marjaana Rantala, University of Turku; Markus Nurmi, University of Turku, Peter Gollan, University of Turku, Marjaana Suorsa, University of Turku; Eva-Mari Aro, University of Turku	Electron and proton transfer
103. Sanna Rantala	Novel chloroplast regulatory protein TMP26 is involved in optimization of photosynthetic electron transfer under high light	Sanna Rantala, University of Turku Marjaana Suorsa, University of Turku Mika Kallioniemi, University of Gothenburg Peter J. Gollan, University of Turku Mikko Tikkanen, University of Turku Björn Lundin, University of Gothenburg Eva-Mari Aro, University of Turku <sup>1</sup> Molecular Plant Biology, Department of Biochemistry, University of Turku, FI-20014 Turku, Finland University of Gothenburg	Electron and proton transfer
161. Thomas Renger	Different Strategies for Collecting Light: Insights from Structure-Based Theory	Thomas Renger, Julian Adolphs, Alexander Klinger, Florian Steinecker, Marcel Schmidt am Busch, Frank Müh, Johannes Kepler University Linz; El-Amine Madjet, Desy Hamburg; Jorge Numata, Free University Berlin	Light harvesting
92. Jeff Ritter	The Effects of C3 and C4 Photosynthesis on Oxygen Isotope Exchange Between Leaf Water and Atmospheric CO2	Jeff Ritter, Washington State University; Asaph B. Cousins, Washington State University	Carbon for water
212. Elisabet Romero	Photosynthesis Exploits Quantum Coherence for Efficient Solar Energy Conversion	Elisabet Romero, VU University, Amsterdam, The Netherlands; Ramunas Augulis, Lund University, Lund, Sweden; Vladimir I. Novoderezhkin, Moscow State University, Moscow, Russia; Marco Ferretti, VU University, Amsterdam, The Netherlands; Jos Thieme, VU University, Amsterdam, The Netherlands; Donatas Zigmantas, Lund University, Lund, Sweden; Rienk van Grondelle, VU University, Amsterdam, The Netherlands.	Reaction center function

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32. David Rosenthal	Biochemical acclimation and stomatal limitation of Soybean ( <i>Glycine max</i> ) decrease photosynthetic stimulation at elevated [CO <sub>2</sub> ] and temperatures under fully open air conditions (T-FACE)	David M. Rosenthal, Ohio University; Ursula M. Ruiz-Vera, University of Illinois, Matthew H. Siebers, University of Illinois; Carl J. Bernacchi, USDA and University of Illinois; Donald R. Ort, USDA and University of Illinois	Photosynthesis in a changing global environment
73. Joshua Rosnow	Positive Selection Analysis of Phosphoenolpyruvate carboxylase (ppcA) from Kranz and nonKranz forms of C <sub>4</sub> photosynthesis in Suaedoideae ( <i>Chenopodiaceae</i> )	Josh Rosnow, Gerald E. Edwards, Eric H. Roalson ; Washington State University	C <sub>4</sub> /CAM and CO <sub>2</sub> concentration mechanisms
162. Melissa Roth	Elucidating high photoprotection capacity in a unicellular green alga	Melissa S. Roth, Lawrence Berkeley National Laboratory, University of California, Berkeley; Krishna K. Niyogi, Lawrence Berkeley National Laboratory, Howard Hughes Medical Institute, University of California, Berkeley	Light harvesting
33. Ursula Ruiz Vera	The increases in soybean photosynthesis and productivity under future high CO <sub>2</sub> concentration can be reduced by warmer conditions	Ursula M. Ruiz-Vera (1), Matthew Siebers (1), Sharon B. Gray (1), David W. Drag (1), David M. Rosenthal (2), Bruce A. Kimball (3), Donald R. Ort (2,1), Carl J. Bernacchi (2,1) (1) University of Illinois at Urbana-Champaign, (3) U.S. Arid-Land Agricultural Research Center, USDA-ARS, (2) Global Change and Photosynthesis Research Unit, USDA-ARS	Photosynthesis in a changing global environment
34. Nelson Saibo	Over-expression of OsICE1 improves photosynthesis performance in rice plants under drought stress	Subhash Chander, ITQB-UNL; Miguel Costa, ITQB-UNL; Tânia Serra, ITQB-UNL; Pedro Barros, ITQB-UNL; M. Margarida Oliveira, ITQB-UNL; Nelson J.M. Saibo, ITQB-UNL	Photosynthesis in a changing global environment
163. Akihiro Saito	Phosphorylation of Lhcb1 mediated by cytochrome b6f is crucial for photosynthetic acclimation to Fe deficiency in barley.	Akihiro Saito, Tokyo University of Agriculture; Kyoko Higuchi, Tokyo University of Agriculture; Kintake Sonoike; Waseda University	Light harvesting
35. Eitan Salomon	Complex metal homeostasis interactions determines the structure and function of the photosynthetic apparatus in <i>Synechocystis</i> sp. strain PCC 6803	Shir Sharon, The Hebrew University in Jerusalem Eitan Salomon, The Hebrew University in Jerusalem Robert Lehman, Humboldt University Berlin Jens Georg, University of Freiburg Wolfgang R Hess, University of Freiburg Nir Keren, The Hebrew University in Jerusalem	Photosynthesis in a changing global environment
36. Ryoichi Sato	Characterization of a novel gene LAP1 conserved in oxygenic phototrophs that involved in non-photochemical quenching	Ryoichi Sato, Graduate School of Bioscience and Biotechnology, Tokyo Institute of Technology; Shinichi Takaichi, Department of Biology, Nippon Medical School; Hiroyuki Ohta, Center for Biological Resources and Informatics, Tokyo Institute of Technology; Shinji Masuda, Center for Biological Resources and Informatics, Tokyo Institute of Technology	Photosynthesis in a changing global environment
213. Kenneth Sauer	Cyanobacteria - Thermophiles and Thermophobes	Kenneth Sauer, University of California, Berkeley and Lawrence Berkeley National Laboratory	Reaction center function

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164. Sergei Savikhin	The fate of the triplet excitations in the Fenna-Matthews-Olson complex	Shigeharu Kihara, Purdue University; Daniel Hartzler, Purdue University; Gregory S. Orf, Washington University in St. Louis; Robert E. Blankenship, Washington University in St. Louis; Sergei Savikhin, Washington University in St. Louis	Light harvesting
165. Richard Sayre	Engineering microalgae with self-adjusting antenna size for enhanced photosynthetic efficiency and productivity	Sangeeta Negi, New Mexico Consortium, Los Alamos NM; Zoe Perrin, Phycal, Inc., St. Louis MO; Anil Kumar, Phycal, Inc., St. Louis MO; Amanda Barry, Los Alamos National Laboratory, Los Alamos, NM; Richard Sayre, Los Alamos National Laboratory, Los Alamos, NM, New Mexico Consortium, Los Alamos NM	Light harvesting
166. Gabriela Schlau-Cohen	Elucidation of the Photodynamics of Single LH2 Complexes in Solution	Gabriela Schlau-Cohen, Stanford University; Quan Wang, Stanford University; June Southall, University of Glasgow; Richard Cogdell, University of Glasgow; W.E. Moerner, Stanford University	Light harvesting
214. Wolfgang Schroder	Knock-out PsbY plants of Arabidopsis displays alteration in the oxidation properties of the Cytb559	Lotta von Sydow <sup>1</sup> , Serena Schwenkert <sup>2</sup> , Jörg Meurer <sup>2</sup> , Fikret Mamedov <sup>3</sup> and Wolfgang P. Schröder <sup>1, 4*</sup> <sup>1</sup> Dept of Chemistry, Umeå University, SE-901 87 Umeå, Sweden. <sup>2</sup> Department Biologie I; Ludwig-Maximilians-Universität München, 82152 Planegg-Martinsried, Germany. <sup>3</sup> Department of Photochemistry and Molecular Science, Uppsala University, SE-751 20 Uppsala, Sweden. <sup>4</sup> Umeå Plant Science Centre (UPSC), Umeå University, SE-901 87 Umeå, Sweden.	Reaction center function
105. Mark Schumaker	Qo site bypass reactions may stabilize the normal working state of the respiratory and photosynthetic electron transport chains	Mark F. Schumaker, Washington State University Nicholas Fisher, Michigan State University David M. Kramer, Michigan State University Isaac Forquer, Portland VA Research Foundation Mark Friedman, University of Alabama in Huntsville Vitaly A. Selivanov, Universitat de Barcelona, Barcelona, Spain	Electron and proton transfer
167. Tobias Schumann	Acclimation of Arabidopsis thaliana to different growth light conditions: impact on energy dissipation and thylakoid membrane organization	Tobias Schumann, Heinrich-Heine-University Duesseldorf, Germany; Suman Paul, Max-Planck-Institute for Chemical Energy Conversion, Mülheim a.d. Ruhr, Germany; Alfred Holzwarth, Max-Planck-Institute for Chemical Energy Conversion, Mülheim a.d. Ruhr, Germany; Peter Jahns, Heinrich-Heine-University Duesseldorf, Germany	Light harvesting
106. Milou Schuurmans	Redox state measurement in the cyanobacterium Synechocystis PCC 6803: impact of the environment on the plastoquinol/plastoquinone ratio	R.M. Schuurmans, University of Amsterdam; H.C.P. Matthijs, University of Amsterdam; L.J. Stal, Royal Netherlands Institute for Sea Research (NIOZ); K.J. Hellingwerf, University of Amsterdam	Electron and proton transfer
107. Eliezer Schwarz	Plug-and-Play Photosynthesis: Non-native redox carriers for engineering alternative photosystem I electron sinks	Eliezer Schwarz, David Kramer, Michigan State University	Electron and proton transfer
108. Daisuke Seo	Functional role of the C-terminal extension region of ferredoxin-NADP <sup>+</sup> oxidoreductases from Bacillus subtilis on the reaction with NADP <sup>+</sup> /H and ferredoxin	Daisuke Seo, Kanazawa University; Hidehiro Sakurai, Kanagawa University; Sétif Pierre, CEA Saclay; Takeshi Sakurai, Kanazawa University	Electron and proton transfer

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74. Erika Serrano-Romero	The temperature response of C4 photosynthetic efficiency in <i>Setaria viridis</i>	Erika Serrano-Romero, Washington State University; Anthony Gandin, Washington State University; Ryan Boyd, Washington State University; Asaph Cousins, Washington State University.	C4/CAM and CO2 concentration mechanisms
75. Richard Sharpe	A Developmental Snapshot of a Reference de novo Leaf Transcriptome of the Single Cell C4 <i>Bienertia sinuspersici</i>	Richard M. Sharpe, Washington State University; Artemus Harper, Washington State University; Sascha Offermann, Leibniz Universität Hannover; Amit Dhingra, Washington State University; Gerald E. Edwards, Washington State University;	C4/CAM and CO2 concentration mechanisms
199. Gaozhong Shen	Pathway engineering for production and characterization of carotenoids in cyanobacterium <i>Synechococcus</i> sp. PCC 7002: canthaxanthin synthesis, assembly and function	Gaozhong Shen, Donald A. Bryant, Pennsylvania State University; Samantha B. Reed, Sergey Lyubinetsky, Alexander S. Beliaev, Pacific Northwest National Laboratory	Carotenoids
7. Ding-Ji Shi	Functional differences of expressive products two conservative domain of pepc gene from <i>Anabaena</i> sp. PCC7120	Xiao-Hui Jia, Ding-Ji Shi, Qi-Lin Tian, Xi-Wen Huang, Pei-Min He Key Laboratory of Exploration and Utilization of Aquatic Genetic Resources, Shanghai Ocean University, Ministry of Education. Institute of Botany, Chinese Academy of Sciences. Hua-Ling Mi National Key Laboratory of Plant Molecular Genetics, Institute of Plant Physiology and Ecology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences. Li-Jun Hou, Yu-Qing Chen Tianjin University of Science & Technology.	Learning from CO2 concentrating mechanisms for increasing productivity
168. Yutaka Shibata	Light-harvesting dynamics in photosystem II: a combination of time-resolved fluorescence spectroscopy and microscopic theory	Yutaka Shibata, Ahmed Ibrahim Ali Mohamed, Hiroshi Fukumura, Tohoku University; Shunsuke Nishi, Ryo Nagao, Takumi Noguchi, Nagoya University; Keisuke Kawakami, Osaka City University; Jian-Ren Shen, Okayama University; Thomas Renger, Johannes Kepler Universität Linz	Light harvesting
76. Patrick Shih	Resurrection and characterization of ancestral Precambrian RuBisCOs	Patrick M. Shih, University of California Berkeley; Alessandro Occhialini, Rothamsted Research; Jeffery C. Cameron, University of California Berkeley; Martin A. J. Parry, Rothamsted Research; Cheryl A. Kerfeld, University of California Berkeley	C4/CAM and CO2 concentration mechanisms
109. Ginga Shimakawa	Suppression of respiration delayed the induction of photosynthesis in cyanobacteria	Ginga Shimakawa, Kobe University; Hiroshi Yamamoto, Kyoto University; Amane Makino, Tohoku University; Chikahiro Miyake, Kobe University	Electron and proton transfer
268. Mitsuo Shoji	QM/MM study on the photosystem II oxygen evolving complex at the S1 state	Mitsuo Shoji, University of Tsukuba; Hiroshi Isobe, Okayama University; Shusuke Yamanaka, Osaka University; Nobuo Kamiya, Osaka City University; Jian-Ren Shen, Okayama University; Kizashi Yamaguchi, Osaka City University	Water oxidation

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37. Constant Signarbieux	Ecophysiological Response of Beech and Spruce to Simulated Climate Change across an Altitudinal Gradient: a Field Study	Constant Signarbieux, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland Paula Sanginés de Carcer, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland Félix Hernandez, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland Claire Berthelon, University of Nancy, France Alexandre Buttler, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland	Photosynthesis in a changing global environment
313. Laís B. C. Silva	A simulated heat wave (+2°C) increases the proportion of N fixation in a tropical forage plantation dominated by the legume <i>Stylosanthes capitata</i>	Laís B. C. Silva, Fernanda Manchon, Carlos Martinez, University of Sao Paulo, Brazil. Miquel Gonzalez-Meler, University of Illinois, USA.	Photosynthesis in a changing global environment
38. Andrew Simkin	Metabolic engineering to enhance photosynthesis and increase crop yield	Andrew J Simkin, Tracy Lawson, Patricia E Lopez-Calcano, Lauren Headland, Christine A Raines School of Biological Sciences, Wivenhoe Park, University of Essex, Colchester, CO4 3SQ, United Kingdom	Photosynthesis in a changing global environment
110. Johannes Sjöholm	The kinetic isotope effect of tyrosine D oxidation reports on the mechanism of proton coupled electron transfer in Photosystem II	Johannes Sjöholm, Uppsala University; Katharina Brinkert, Imperial College London; Felix Ho, Uppsala University; Fikret Mamedov, Uppsala University; Leif Hammarström, Uppsala University; Stenbjörn Styring, Uppsala University.	Electron and proton transfer
304. Arturo Solís-Herrera	Human Photosynthesis, the Black Swan of Energy	Arturo Solís Herrera, MD, Ph.D. María del Carmen Arias Esparza, MD, MsC., Ruth Isabel Solís Arias MD, Paola Eugenia Solís Arias, MD, Martha Patricia Solís Arias. MD. Human Photosynthesis Study Center. López Velarde 108, Centro. Aguascalientes, México. CP 20000 comagua2000@yahoo.com carmenrpp@yahoo.com +524499160048 +52449150042	Photosynthesis and Bioenergy
305. Idan Spitz	Can the exceptional chilling tolerance of C4 photosynthesis found in <i>Miscanthus x giganteus</i> be exceeded? Screening of a Japanese germplasm collection.	Katarzyna Glowacka, University of Illinois, Institute of Genomic Biology; Idan Spitz, University of Illinois, Energy Biosciences Institute; Uffe Jørgensen, Aarhus University, Department of Agroecology; Kirsten Kørup, Aarhus University, Department of Agroecology; Erik J. Sacks, University of Illinois, Institute of Genomic Biology; Stephen. P. Long, University of Illinois, Energy Biosciences Institute.	Photosynthesis and Bioenergy
215. Valentyn Stadnytskyi	The intrinsic charge separation rate in the reaction center from <i>Chlorobium tepidum</i>	Adrien Chauvet, Purdue University; Valentyn Stadnytskyi, Purdue University; Steven Romberger, The Pennsylvania State University; John H. Golbeck, The Pennsylvania State University; Sergei Savikhin, Purdue University;	Reaction center function
77. Matt Stata	C4 plants have fewer chloroplasts in their mesophyll cells than closely related C3 plants	Matt Stata, Troy D. Rennie, Tammy L. Sage, Roxana Khoshraveh, Stephanie Sultmanis and Rowan F. Sage. Department of Ecology and Evolutionary Biology, University of Toronto, Toronto, ON M5S3B2 Canada	C4/CAM and CO2 concentration mechanisms
39. Ralf Steuer	Systemic properties of phototrophic growth: Computational models of cyanobacterial metabolism	Ralf Steuer, Humboldt University of Berlin, Germany	Photosynthesis in a changing global environment

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40. Joseph Stinziano	Elevated Temperatures Prevent Photosynthetic Decline In Norway Spruce ( <i>Picea Abies</i> ) During A Simulated Autumn	Joseph R. Stinziano, Western University; Leonid V. Kurepin, Western University; Danielle A. Way, Western University; Vaughan Hurry, Umeå University; Gunnar Öquist, Umeå University; Norman P.A. Hüner, Western University	Photosynthesis in a changing global environment
111. Deserah Strand	Hydrogen Peroxide Activates Cyclic Electron Flow in vivo	Deserah D. Strand and David M. Kramer, Plant Research Laboratory and Department of Plant Biology, Michigan State University, East Lansing, MI; Aaron K. Livingston, Institute of Biological Chemistry, Washington State University, Pullman, WA; Verónica G. Maurino, Botanisches Institut, Universität zu Köln, 50931 Cologne, Germany	Electron and proton transfer
216. Michal Štroch	Photosynthetic characteristics of barley grown under blue, red and green LED illumination	Michal Štroch, University of Ostrava; Daniel Vrábl, University of Ostrava; Zuzana Materová, University of Ostrava; Jan Semer, University of Ostrava; Vladimír Špunda, University of Ostrava	Reaction center function
78. Anthony Studer	Carbonic anhydrase is not essential for C4 photosynthesis in the grasses	Anthony J. Studer, Donald Danforth Plant Science Center; Allison R. Kolbe, Donald Danforth Plant Science Center; Anthony Gandin, Washington State University; Lin Wang, Donald Danforth Plant Science Center; Asaph B. Cousins, Washington State University; Thomas P. Brutnell, Donald Danforth Plant Science Center	C4/CAM and CO2 concentration mechanisms
169. James Sturgis	Purple Bacterial Photosynthetic Proteins aggregate in liposomes	Cecile Blanchard, Aix-Marseille University; Valerie Prima, Aix-Marseille University; James N. Sturgis, Aix-Marseille University	Light harvesting
93. Samantha Stutz	When leaf respiration is not leaf respiration	Samantha S. Stutz, University of New Mexico; David T. Hanson, University of New Mexico	Carbon for water
306. Sowmya Subramanian	Enhancing algal biomass productivity in fluctuating light regimes by increasing plastoquinone pool size	Sowmya Subramanian, New Mexico Consortium and Los Alamos National Laboratory; Richard T. Sayre, New Mexico Consortium and Los Alamos National Laboratory; Kelly M Gillespie, Donald Danforth Plant Science Centre; Ellen Marsh, Donald Danforth Plant Science Centre; Amanda Barry, Los Alamos National Laboratory; Edgar B. Cahoon, Department of Biochemistry at University of Nebraska-Lincoln.	Photosynthesis and Bioenergy
41. Emi Sudo	Growth of transgenic rice with an overexpression of RBCS under different CO2 partial pressures	Emi Sudo, Tohoku University; Yuji Suzuki, Tohoku University; Amane Makino, Tohoku University;	Photosynthesis in a changing global environment
269. Michi Suga	Crystal structure of Psb31, a novel extrinsic protein of photosystem II from a marine centric diatom <i>Chaetoceros gracilis</i>	Michihiro Suga, Okayama university; Ryo Nagao, Nihon university; Ayako Niikura, Okayama university; Akinori Okumura, Nihon University; Faisal Hammad Mekky Koua, Okayama university; Takehiro Suzuki, Discovery Research Institute, RIKEN; Tatsuya Tomo, Tokyo university of science; Isao Enami, Tokyo university of science & Jian-Ren Shen, Okayama university	Water oxidation
217. Miwa Sugiura	Environment of TyrZ in Photosystem II from <i>Thermosynechococcus elongatus</i> in which PsbA2 Is the D1 Protein	Miwa Sugiura, Ehime University; Shogo Ogami, Ehime University; Mai Kusumi, Ehime University; Sun Un, CEA Saclay; Fabrice Rappaport, Institut de Biologie Physico-Chimique; Alain Boussac, CEA Saclay	Reaction center function



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79. Stefanie Sultmanis	A Blast from the Past: Re-establishment and characterization of hybrids between C3 and C4 species of Atriplex to dissect the control of differentiation of C4 Kranz anatomy	Stefanie Sultmanis, Rowan F. Sage and Tammy L Sage, Department of Ecology & Evolutionary Biology, University of Toronto, Toronto, Ontario Canada	C4/CAM and CO2 concentration mechanisms
218. Tina Summerfield	Environmental pH Alters Growth of Photosystem II Mutants in Synechocystis sp. PCC 6803	Tina C. Summerfield <sup>1</sup> , Tim S. Crawford <sup>1, 2</sup> , Roger D. Young <sup>1</sup> , Jocelyn P. S. Chua <sup>1</sup> , Rebecca L. Macdonald <sup>1</sup> , Louis A. Sherman <sup>3</sup> and Julian J. Eaton-Rye <sup>2</sup> <sup>1</sup> Department of Botany, University of Otago, PO Box 56, Dunedin, 9054, New Zealand <sup>2</sup> Department of Biochemistry, University of Otago, PO Box 56, Dunedin, 9054, New Zealand <sup>3</sup> Purdue University, Department of Biological Sciences, 915 W. State St., Lilly Hall, West Lafayette, IN 47907, USA	Reaction center function
112. Marjaana Suorsa	Arabidopsis plants lacking PsbQ and PsbR subunits of the oxygen-evolving complex show altered PSII supercomplex organization and short-term adaptive mechanisms	Marjaana Suorsa, University of Turku; Yagut Allahverdiyeva, University of Turku; Fabio Rossi, Andrea Pavesi, Martin Kater, University of Milan; Alessia Antonacci, University of Eastern Piedmont; Luca Tadini, Mathias Pribil, Anja Schneider, Gerhard Wanner, Dario Leister, Ludvig Maximilians Universität; Eva-Mari Aro, University of Turku; Roberto Barbato, University of Eastern Piedmont; Paolo Pesaresi, University of Milan	Electron and proton transfer
17. Yuji Suzuki	Changes in photosynthetic and related primary metabolism in RBCS-transgenic rice plants	Yuji Suzuki, Tohoku University; Tamaki Fujimori, Human Metabolome Technologies, Inc.; Keiichi Kanno, Tohoku University; Yoshiaki Ohashi, Human Metabolome Technologies, Inc.; Amane Makino, Tohoku University	Regulation of the C3 carbon reduction cycle
42. Mayumi Suzuki	Scavenging systems of reactive carbonyls: aldo-keto reductases, medium- and short-chain dehydrogenases/reductases and glyoxalases in the cyanobacterium Synechocystis sp. PCC 6803	Mayumi Suzuki, Kobe University; Ginga Shimakawa, Kobe University; Hiroshi Yamamoto, Kyoto University; Amane Makino, Tohoku University; Chikahiro Miyake, Kobe University	Photosynthesis in a changing global environment
219. BADSHAH SYED	Mutations that Affect Bidirectional Electron Transfer in Photosystem I.	SYED LAL BADSHAH, Arizona State University.	Reaction center function
170. Sebastian Szewczyk	Photosystem I as a potential light-sensitive material initiating electron transport in photovoltaic cells.	Sebastian Szewczyk, Adam Mickiewicz University, Poland Wojciech Giera, Adam Mickiewicz University, Poland Sandrine d'Haene, Vrije Universiteit, The Netherlands Michael McConnell, Arizona State University, USA Krzysztof Gibasiewicz, Adam Mickiewicz University, Poland	Light harvesting
171. Kinga Sznee	Energy transfer in thylakoids of plants grown under different light conditions	Kinga Sznee, Ludwik Bielczynski, Roberta Croce, Jan P. Dekker Faculty of Sciences, Division of Physics and Astronomy ,Vrije Universiteit, De Boelelaan 1081, 1081 HV Amsterdam The Netherlands	Light harvesting

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43. Dora Szopko	Effects of NaCl on the photosynthetic parameters of wheat-barley genotypes	Dora Szopko, Eszterhazy College, Eger, Hungary; Marta Molnar-Lang, Centre for Agricultural Research, Hungarian Academy of Sciences, Martonvasar, Hungary; Istvan Molnar, Centre for Agricultural Research, Hungarian Academy of Sciences, Martonvasar; Eva Darko, Centre for Agricultural Research, Hungarian Academy of Sciences, Martonvasar; Andras Vojtko, Eszterhazy College, Eger; Andrea Sass-Gyarmati, Eszterhazy College, Eger; Sandor Dulai, Eszterhazy College, Eger	Photosynthesis in a changing global environment
113. Renata Szymanska	Hybrid incompatibility in Arabidopsis – biochemical study	Renata Szymańska, Jagiellonian University, Beatrycze Nowicka, Jagiellonian University, Michał Gabruk, Jagiellonian University, Jolanta Dłużewska, Jagiellonian University, Sława Glińska, University of Lodz, Roosa Laitinen, Max Planck Institute	Electron and proton transfer
220. Alexander Taguchi	Conformational differences between the methoxy groups of QA and QB site ubisemiquinones in bacterial reaction centers: a key role for methoxy group orientation in modulating ubiquinone redox potential	Alexander T. Taguchi, University of Illinois, Center for Biophysics and Computational Biology, Urbana, IL 61801 Patrick J. O'Malley, University of Manchester, School of Chemistry, Manchester M13 9PL, U.K. Colin A. Wraight, University of Illinois, Center for Biophysics and Computational Biology, Urbana, IL 61801 Sergei A. Dikanov, University of Illinois, Department of Veterinary Clinical Medicine, Urbana, IL 61801	Reaction center function
44. Hiroko Tahara	Role of SltA1, which transports lipid, in environmental stress tolerance in cyanobacterium Synechocystis sp. PCC6803	Hiroko Tahara, Tokyo University of Science; Ayumi Matsuhashi, Tokyo University of Science; Kouji Matsumoto, Saitama University; Junji Uchiyama, Tokyo University of Science; Hisataka Ohta, Tokyo University of Science	Photosynthesis in a changing global environment
270. Henry Tai	Bisubstrate analysis of Ca <sup>2+</sup> and Cl <sup>-</sup> activation of photosystem II oxygen evolution at pH 5.5	Henry Tai and Alice Haddy, University of North Carolina: Greensboro	Water oxidation
114. Hiroko TAKAHASHI	Functional analysis of PETO in Chlamydomonas reinhardtii	Hiroko Takahashi, UMR7141, IBPC, CNRS; Sophie Clowez, UMR7141, IBPC, CNRS; Jean Alric, UMR7141, IBPC, CNRS; Fabrice Rappaport, UMR7141, IBPC, CNRS; Stefan Schmollinger, Max-Planck-Institut; Michael Schroda, the University of Kaiserslautern; Francis-André Wollman, UMR7141, IBPC, CNRS; Olivier Vallon, UMR7141, IBPC, CNRS	Electron and proton transfer
200. Shinichi Takaichi	Carotenoid composition including $\alpha$ -carotene of unusual cyanobacteria with unique chlorophylls: Acaryochloris (Chl a/d), Prochlorococcus (DV-Chl a/b), Prochlorothrix (Chl a/b) and Prochloron (Chl a/b)	Shinichi Takaichi, Nippon Medical School; Hiroko Uchida, Kobe University of Research Center of Inland Seas; Euichi Hirose, University of the Ryukyus; Mari Mochimaru, Komazawa University; Akio Murakami, Kobe University of Research Center of Inland Seas	Carotenoids
172. Ofir Tal	Investigation of the Rod-Core interface of the Phycobilisome by coupled cross-linking/mass spectrometry	Ofir Tal, The Technion (Israel Institute of Technology), Israel	Light harvesting

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173. Hitoshi Tamiaki	Chlorophylls-c and protochlorophyllide-a in photosynthetic organisms are enantiomerically pure chlorophylls possessing a carboxylated porphyrin p-system	Tadashi Mizoguchi, Ritsumeikan University; Hitoshi Tamiaki, Ritsumeikan University	Light harvesting
45. Yanhong Tang	Temperature response of dynamic photosynthesis changes with environmental CO <sub>2</sub> concentration	Yanhong Tang, National Institute for Environmental Studies, Japan	Photosynthesis in a changing global environment
174. Joseph Tang	Environmental Adaptation of Light-Harvesting Antenna in Green Sulfur Bacteria	Joseph K.-H. Tang, Clark University; Semion K. Saikin, Harvard University; Moataz M. Hannout, Clark University; Sai Venkatesh Pingali, Oak Ridge National Laboratory; Miriam Enriquez, University of Connecticut; Volker S. Urban, Oak Ridge National Laboratory; Harry A. Frank, University of Connecticut; Alan Aspuru-Guzik; Harvard University	Light harvesting
80. Samuel Taylor	Photosynthetic advantages of C <sub>4</sub> grasses in the field: a comparative experiment demonstrating the importance of water limitation	Samuel H. Taylor, University of Sheffield, currently Bowdoin College Brad S. Ripley, Rhodes University Tarryn Martin, Rhodes University Leigh-Ann De-Wet, Rhodes University F. Ian Woodward, University of Sheffield Colin P. Osborne, University of Sheffield	C <sub>4</sub> /CAM and CO <sub>2</sub> concentration mechanisms
175. Lijin Tian	Determining the fluorescence lifetimes of the unconnected photosynthetic antennas in <i>Chlamydomonas reinhardtii</i> in vivo	Lijin Tian, Emine Dinc and Roberta Croce Biophysics of Photosynthesis, Dep. Physics and Astronomy, Faculty of Sciences, VU University Amsterdam, De Boelelaan 1081, 1081 HV, Amsterdam, The Netherlands	Light harvesting
115. Mikko Tikkanen	Integrative regulatory network of thylakoid energy transduction	Mikko Tikkanen, Michele Grieco, Nageswara Rao Mekala and Eva-Mari ARO Molecular Plant Biology, Department of Biochemistry and Food Chemistry, University of Turku, 20014 Turku, Finland.	Electron and proton transfer
176. Jerilyn Timlin	Structural analysis of thylakoid membranes in <i>Chlamydomonas reinhardtii</i> lines with altered antenna size	Sangeeta Negi New Mexico Consortium, Los Alamos NM Zoe Perrine, Phycal, Inc., St. Louis, MO Aaron Collins, Sandia National Laboratories, Albuquerque NM Jerilyn Timlin, Sandia National Laboratories, Albuquerque NM Volker Urban, Oakridge National Laboratory, Oakridge TN Hugh O'Neill, Oakridge National Laboratory, Oakridge TN Brad O'Dell, Oakridge National Laboratory, Oakridge TN Richard Sayre New Mexico Consortium, Los Alamos NM, Los Alamos National Laboratory, Los Alamos, NM	Light harvesting
201. Danielle Tokarz	Localization of astaxanthin accumulation in <i>Haematococcus pluvialis</i> as imaged with nonlinear optical microscopy	Danielle Tokarz, University of Toronto; Richard Cisek, University of Toronto; George Espie, University of Toronto; Ulrich Fekl, University of Toronto; Virginijus Barzda, University of Toronto.	Carotenoids

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46. Dimitri Tolleter	SYMBIODINIUM PHOTOSYNTHESIS AND CORAL BLEACHING	Dimitri Tolleter, Carnegie Institution for Science; François O. Seneca, Stanford University; Jan C. DeNofrio, Stanford University School of Medicine; TingTing Xiang, Carnegie Institution for Science; Cory J. Krediet, Stanford University School of Medicine; John R. Pringle, Stanford University School of Medicine; Arthur R. Grossman, Carnegie Institution for Science	Photosynthesis in a changing global environment
222. Szilvia Z. Toth	Photoinhibition and repair of photosystem I studied by inducible PsaD- and PsaE- RNAi tobacco mutants and synthetic antisense oligodeoxynucleotides	Szilvia Z. Toth 1,2, Marta Hojka 1, Wolfram Thiele 1, Emine Dinc 3, Gyorgyi Ferenc 2, Ralph Bock 1 and Mark Aurel Schottler 1 1 Max Planck Institute of Molecular Plant Physiology, Am Muhlenberg 1, D-14476 Potsdam-Golm, Germany 2 Biological Research Centre of the Hungarian Academy of Sciences, H-6726 Szeged, Hungary 3 Department of Physics and Astronomy, Faculty of Sciences, VU University Amsterdam, De Boelelaan 1081, 1081 HV, Amsterdam, The Netherlands	Reaction center function
271. Rosalie Tran	The Role of Calcium in Photosynthetic Water Oxidation Studied by X-Ray Absorption Spectroscopy	R. Tran, Lawrence Berkeley Laboratory; E. Tsui, California Institute of Technology; J. Kanady, California Institute of Technology; J. Kern, Lawrence Berkeley Laboratory; B. Lassalle, Lawrence Berkeley Laboratory; S. Gul, Lawrence Berkeley Laboratory; G. Han, Lawrence Berkeley Laboratory; R. Chatterjee, Lawrence Berkeley Laboratory; A. Boussac, CEA Saclay; T. Agapie, California Institute of Technology; V. Yachandra, Lawrence Berkeley Laboratory; J. Yano, Lawrence Berkeley Laboratory.	Water oxidation
48. Baishnab Tripathy	Photosynthetic Responses of Brassica Plants Grown at Elevated Carbon Dioxide in Free-Air CO2 Enrichment Facility	Baishnab C. Tripathy, Kamal Ruhil, School of Life Sciences, Jawaharlal Nehru University, New Delhi 110067, India	Photosynthesis in a changing global environment
177. Yusuke Tsukatani	Lipid Analyses in envelope protein mutants of chlorosomes of Chlorobaculum tepidum	Yusuke Tsukatani, Ritsumeikan University; Tadashi Mizoguchi, Ritsumeikan University; Jennifer Thweatt, The Pennsylvania State University; Marcus Tank, The Pennsylvania State University; Donald A. Bryant, The Pennsylvania State University; and Hitoshi Tamiaki, Ritsumeikan University	Light harvesting
116. Esa Tyystjärvi	Redox state of plastoquinone regulates cyclic electron flow	Marja Hakala-Yatkin, University of Turku; Heta Mattila, University of Turku; Taras Antal, University of Turku; Vesa Havurinne, University of Turku; Taina Tyystjärvi, University of Turku; Esa Tyystjärvi, University of Turku	Electron and proton transfer
49. Junji Uchiyama	Characterization of ABC transporter genes, sll1180 involved in acid stress tolerance of Synechocystis sp. PCC 6803.	Junji Uchiyama, Tokyo University of Science; Yu Tanaka, Tokyo University of Science; Ayumi Matsuhashi, Tokyo University of Science; Hisataka Ohta, Tokyo University of Science.	Photosynthesis in a changing global environment

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117. G. Matthias Ullmann	A New Approach to Simulate Multistep Charge Transfer Reactions in Protein Complexes. An Analysis of the Electron Transfer between the Tetraheme-Subunit and the Special Pair of the Photosynthetic Reaction Center	G. Matthias Ullmann, Structural Biology/Bioinformatics, University of Bayreuth, Universitätsstr. 30, 95447 Bayreuth, Germany Elisa Bombarda, Structural Biology/Bioinformatics, University of Bayreuth, Universitätsstr. 30, 95447 Bayreuth, Germany	Electron and proton transfer
178. Caner Ünlü	State Transitions in Chlamydomonas Reinhardtii	Caner Ünlü, Wageningen University; Bartłomiej Drop, Vrije University Amsterdam; Roberta Croce, Vrije University Amsterdam; Herbert van Amerongen, Wageningen University.	Light harvesting
223. Lisa Utschig	Photosynthetic Reaction Center-Molecular Catalyst Hybrid Complexes for Solar Hydrogen Production	Lisa Utschig, Argonne National Laboratory Sunshine Silver, Argonne National Laboratory Karen Mulfort, Argonne National Laboratory Pingwu Du, Argonne National Laboratory Jens Niklas, Argonne National Laboratory Oleg Poluektov, Argonne National Laboratory David Tiede, Argonne National Laboratory	Reaction center function
179. Frantisek Vacha	Three major light harvesting complexes of Chromera velia	David Bina, Faculty of Science, University of South Bohemia; Zdenko Gardian, Faculty of Science, University of South Bohemia; Miroslava Herbstova, Faculty of Science, University of South Bohemia; Radek Litvin, Faculty of Science, University of South Bohemia; Josef Tichy, Faculty of Science, University of South Bohemia; Frantisek Vacha, Faculty of Science, University of South Bohemia	Light harvesting
180. Roland Valcke	Chlorophyll fluorescence characteristics of the adaxial and abaxial side of the leaf.	Roland Valcke, Hasselt University, Faculty of Sciences Molecular and Physical Plant Physiology, Agoralaan, Bldg D, 3590 Diepenbeek, Belgium	Light harvesting
50. Luis Valledor	Systemic cold stress adaptation of Chlamydomonas reinhardtii	Luis Valledor, Global Change Research Centre AS CR, Brno, Czech Republic; Takeshi Furuhashi, RIKEN Plant Science Centre, Yokohama, Japan; Wolfram Weckwerth, University of Vienna, Austria	Photosynthesis in a changing global environment
1819. Pascal van Alphen	Circadian rhythm in continuous light in Synechocystis sp. PCC6803	Pascal van Alphen, University of Amsterdam, Centrum Wiskunde & Informatica; S. Andreas Angermayr, University of Amsterdam; Roeland M.H. Merks, Centrum Wiskunde & Informatica; Klaas J. Hellingwerf, University of Amsterdam	Light harvesting
307. Tomas van den Berg	Photosynthesis for fuel in the green algae Botryococcus Braunii.	Tomas E. van den Berg, Roberta Croce VU University Amsterdam, Department of Physics and Astronomy, Biophysics of photosynthesis group, De Boelelaan 1081 1081 HV Amsterdam, The Netherlands	Photosynthesis and Bioenergy
182. Bart van Oort	Chlorophyll-Xanthophyll mixed states in non-aggregated LHClI created by multipulse spectroscopy	Bart van Oort, John T.M. Kennis, Rienk van Grondelle and Ivo H.M. van Stokkum, VU University Amsterdam	Light harvesting
183. Ramesh Velupillaimani	Time resolved fluorescence spectroscopic determination of excitation energy transfer in PSI-LHCI supercomplex from Chlamydomonas reinhardtii cells adapted to State 1 and State 2 conditions.	Ramesh Velupillaimani, Grand Canyon University; Su Lin, Arizona State University; Sara Bassilian, University of California; Julian Whitelegge, University of California; Andrew Webber, Arizona state University	Light harvesting

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273. David Vinyard	Natural and bio-inspired Photosystem II D1 subunit isoforms reveal structural determinants of photochemical efficiency and photoprotection	David J. Vinyard, Rutgers University, Princeton University; Javier Gimpel, University of California, San Diego; Gennady M. Ananyev, Rutgers University; Mario A. Cornejo, Rutgers University; Susan S. Golden, University of California, San Diego; Stephen P. Mayfield, University of California, San Diego; G. Charles Dismukes, Rutgers University	Water oxidation
119. Leslie Vogt	Molecular model of atrazine binding in the QB site of Photosystem II	Leslie Vogt, Yale University; Victor S. Batista, Yale University	Electron and proton transfer
184. Chukhutsina Volha	Disentangling two nonphotochemical quenching mechanisms in the diatom <i>Cyclotella meneghiniana</i> by spectrally-resolved picosecond fluorescence at 77 K	Volha Chukhutsina, Wageningen University; Claudia Büchel, Johann Wolfgang Goethe-University; Herbert van Amerongen, Wageningen University	Light harvesting
120. Berkley Walker	The response of cyclic electron flux around photosystem I to changes in ATP and NADPH demand	Berkley J. Walker, Washington State University - presently at University of Illinois; Deserah D. Strand, Michigan State University; David M. Kramer, Michigan State University; Asaph B. Cousins, Washington State University;	Electron and proton transfer
121. Karim Walters	New Approaches to Directly Link Electron Transfer Proteins Using a Modified 2[4Fe-4S] Ferredoxin as a Redox Coupler	Karim A. Walters and John H. Golbeck, The Pennsylvania State University	Electron and proton transfer
25. Shu-Jen Wang	Regulation of a sucrose transporter gene in embryos of germinating rice seeds	Ping Chung, National Taiwan University; Jia-Yi Chen, National Taiwan University; Shiang-Lin Liu, National Taiwan University; Wei Siao, National Taiwan University; Hui-Hsin Hsiao, National Taiwan University; Shu-Jen Wang*, National Taiwan University ,	Photoassimilate use: transport and partitioning
81. Yu Wang	What is the physiological significance of having different mixtures of decarboxylases in C4 plants?	Yu Wang, CAS-MPG Partner Institute for Computational Biology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences; Xinguang Zhu, CAS-MPG Partner Institute for Computational Biology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences	C4/CAM and CO2 concentration mechanisms
122. Liang Wang	Structural and functional studies on Histidine Kinase 2, a cyanobacterial homologue of Chloroplast Sensor Kinase	Liang Wang, Queen Mary University of London; Iskander M. Ibrahim, Queen Mary University of London; Kristina Zubow, Queen Mary University of London; Norbert Krauß, Queen Mary University of London; Jon Nield, Queen Mary University of London; John F. Allen, Queen Mary University of London	Electron and proton transfer
274. Dong Wang	DESIGN OF METAL BINDING PEPTIDES FOR ELECTROCHEMICAL CELLS	Dong Wang, Arizona State University; Sandip Shinde, Arizona State University; Chad Simmons, Arizona State University; Marco Flores, Arizona State University; Hao Yan, Arizona State University; Giovanna Ghirlanda, Arizona State University; James P. Allen, Arizona State University	Water oxidation

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185. Zheng-Yu Wang-Otomo	Crystal structure of a LH1-RC core complex from <i>Thermochromatium tepidum</i>	Zheng-Yu Wang-Otomo, Ibaraki University Long-Jiang Yu, Ibaraki University Satomi Niwa, Kyoto University Kazuki Takeda, Kyoto University Yu Hirano, Kyoto University Tomoaki, Kawakami, Ibaraki University Kunio Miki, Kyoto University	Light harvesting
224. Mai Watanabe	Effects of modified expression of <i>psaA</i> on the high light acclimation in cyanobacteria.	Mai Watanabe, The University of Tokyo, JST CREST; Yukiko Okuda, The University of Tokyo, JST CREST; Masahiko Ikeuchi, The University of Tokyo, JST CREST	Reaction center function
51. Danielle Way	Thermal acclimation of photosynthesis: on the importance of adjusting our definitions and accounting for thermal acclimation of respiration	Danielle A. Way, Western University; Wataru Yamori, Chiba University	Photosynthesis in a changing global environment
123. Ma Weimin	Identification of a cyanobacterial CRR6 protein, Slr1097, required for efficient assembly of NDH-1 complexes in <i>Synechocystis</i> sp. PCC 6803	Huiling Dai, Shanghai Normal University; Lili Zhang, Shanghai Normal University; Jingsong Zhang, Shanghai Normal University; Hualing Mi, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences; Teruo Ogawa, Nagoya University; Weimin Ma, Shanghai Normal university	Electron and proton transfer
26. Sarit Weissmann	The role of DCT2 in maize photosynthetic development	Sarit Weissmann, Donald Danforth Plant Science Center, St. Louis MO Fangfang Ma, Donald Danforth Plant Science Center, St. Louis MO Kaitlin McNally, Boyce Thompson Institute for Plant Research, Ithaca NY Douglas K Allen, Donald Danforth Plant Science Center, St. Louis MO AND United States Department of Agriculture, St. Louis MO Thomas P Brutnell, Donald Danforth Plant Science Center, St. Louis MO	Photoassimilate use: transport and partitioning
225. Daniel Weisz	The Structural Location of PsbQ in Dimeric Photosystem II in the Cyanobacterium <i>Synechocystis</i> sp. PCC 6803	Haijun Liu, Washington University in St. Louis; Hao Zhang, Washington University in St. Louis; Daniel A. Weisz, Washington University in St. Louis; Ilan Vidavsky, U.S. Food and Drug Administration, St. Louis, MO; Michael L. Gross, Washington University in St. Louis; Himadri B. Pakrasi, Washington University in St. Louis	Reaction center function
8. Nicole Wheatley	1.3 Å structure of PDL, a defining member of the alpha-carboxysome, from <i>Thiomonas intermedia</i> K12	Nicole M. Wheatley, University of California, Los Angeles; Christopher D. Sundberg, University of California, Los Angeles; Soheil D. Gidanyian, University of California, Los Angeles; Todd Yeates, University of California, Los Angeles.	Learning from CO <sub>2</sub> concentrating mechanisms for increasing productivity
226. Annegret Wilde	PsrR1 - a sRNA regulating photosynthesis in cyanobacteria	Ekaterina Kuchmina, University Freiburg; Dennis Dienst, Humboldt University Berlin; Jens Georg, University Freiburg; Wolfgang R. Hess, University Freiburg; Annegret Wilde, University Freiburg	Reaction center function
186. Lucyna Włodarczyk	How does <i>Chlamydomonas reinhardtii</i> balance the excitation energy to the photosystems?	Lucyna M. Włodarczyk, VU University Amsterdam; Joris J. Snellenbug, VU University Amsterdam; Ivo H.M. van Stokkum, VU University Amsterdam; Roberta Croce, VU University Amsterdam; Rienk van Grondelle, VU University Amsterdam; Jan P. Dekker, VU University Amsterdam	Light harvesting

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27. Lutz Wobbe	Functional acclimation to higher light intensities requires unperturbed mitochondrial gene expression in <i>C. reinhardtii</i> .	Lutz Wobbe <sup>1</sup> , Andreas Uhmeyer <sup>1</sup> , Claire Remacle <sup>2</sup> , Peter Nixon <sup>3</sup> and Olaf Kruse <sup>1</sup> <sup>1</sup> Algae Biotechnology & Bioenergy Group, Department of Biology, Bielefeld University, 33615 Bielefeld, Germany <sup>2</sup> Génétique des Microorganismes, Department of Life Sciences, Institute of Botany, University of Liège, Liège, Belgium <sup>3</sup> Division of Biology, Faculty of Natural Sciences, Imperial College London, London, UK	Photoassimilate use: transport and partitioning
191. Neal Woodbury	A Nanoengineered System to Enhance and Control the Light-Harvesting Capability for Photosynthetic Energy Conversion	Palash K. Dutta, Su Lin, Andrey Loskutov, Symon Levenberg, Rafael Saer, J. Thomas Beatty, Yan Liu, Hao Yan, Neal Woodbury, Arizona State University	Light Harvesting
308. Victoria Work	Physiology of cyanobacteria altered in metabolic partitioning	Victoria H. Work, Eric A. Hill, Leo A. Kucek, Fiona K. Bentley, Matthew R. Melnicki, Alexander S. Beliaev, Matthew C. Posewitz	Photosynthesis and Bioenergy
124. Erica Wunderlich Majumder	Enzymatic analysis of the Alternative Complex III with its redox partner auracyanin from the photosynthetic bacteria <i>Chloroflexus aurantiacus</i> and <i>Roseiflexus castenholzii</i>	Erica L. Wunderlich Majumder, Washington University in St. Louis; Abigail C. Dommer, Washington University in St. Louis; Jeremy D. King, Washington University in St. Louis; Robert E. Blankenship, Washington University in St. Louis;	Electron and proton transfer
275. WEI XIAO	Construction of a recipient strain of <i>Synechococcus</i> sp. PCC 7002 for structure-function studies of photosystem II	Wei Xiao <sup>1</sup> , Han Bao, Robert L. Burnap, Department of Microbiology and Molecular Genetics, Oklahoma State University	Water oxidation
125. Yueyong Xin	Heterologous expression and functional analysis of full-length Auracyanin of <i>Roseiflexus castenholzii</i>	Yueyong Xin, HangZhou Normal University	Electron and proton transfer
309. Wei Xiong	Fluxomic studies in cyanobacteria for improvement of fuels and chemicals production	Wei Xiong, National Renewable Energy Laboratory; Jianping Yu, National Renewable Energy Laboratory	Photosynthesis and Bioenergy
187. Kui Xu	Different non-photochemical quenching mechanisms among cyanobacteria influence their capacity to acclimate to high light	kui Xu, University of Quebec in Montreal Philippe Juneau, University of Quebec in Montreal	Light harvesting
276. Vittal Yachandra	Structural Changes of the Oxygen Evolving Complex in Photosystem II from X-ray Absorption Spectroscopy – Implications for the Mechanism of Water Oxidation	Carina Glöckner, Technische Universität Berlin; Jan Kern, Lawrence Berkeley National Laboratory and LCLS, SLAC National Accelerator Laboratory; Matthias Broser, Technische Universität Berlin; Athina Zouni, Technische Universität Berlin; Vittal Yachandra, Lawrence Berkeley National Laboratory; Junko Yano, Lawrence Berkeley National Laboratory	Water oxidation
9. Zhang Yali	Photosynthetic capacity and water use efficiency are synchronously increased in drought-acclimated leaves compared to non-acclimated leaves of cotton	Yali Zhang, Shihezi University; Xiangjuan Zhang, Shihezi University; Wangfeng Zhang Shihezi University	Learning from CO <sub>2</sub> concentrating mechanisms for increasing productivity



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277. Kizashi Yamaguchi	Magneto-Structural Correlations II. Full Geometry Optimizations of Eight Spin Configurations of CaMn <sub>4</sub> O <sub>5</sub> cluster and Calculations of Magnetic Interaction Parameters in the S1 and S3 states of Oxygen Evolving Complex of Photosystem II	H. Isobe and J.-R. Shen, Graduate School of Natural Science and Technology, Okayama University, Okayama, 700-8530, Japan M. Shoji, Tsukuba University, Tsukuba, Ibaraki 305- 8577, Japan S. Yamanaka and K. Yamaguchi, Osaka University, Toyonaka, 560-0043, Japan, Y. Umena, K. Kawakami and N. Kamiya, The OCU Advanced Research Institute for Natural Science and Technology (OCARNA), Osaka City University, Osaka 558-8585, Japan	Water oxidation
126. Lifan Yan	Time-resolved Spectroscopy Study of Electron Transfer in a New Class of Co-based Chromophores	Lifen Yan, Purdue University; Katherine Davis, Purdue University; Eric Goggins, North Carolina State University; Walter Weare, North Carolina State University; Valentyn Stadnytskyi, Purdue University; Sergei Savikhin, Purdue University; Yulia Pushkar, Purdue University	Electron and proton transfer
132. Anna Yeates	Light adaptation mechanisms in tobacco-henbane cytoplasmic hybrids	Anna Yeates, Alexander Ruban, Queen Mary University of London.	Light harvesting
52. Craig Yendrek	Photosynthetic targets for improving crop tolerance to ozone	Craig R. Yendrek Global Change and Photosynthesis Research Unit, Agricultural Research Service, USDA, Urbana, IL 61801 USA Elizabeth A. Ainsworth Global Change and Photosynthesis Research Unit, Agricultural Research Service, USDA, Urbana, IL 61801 USA, Department of Plant Biology, University of Illinois, Urbana-Champaign, Urbana, IL 61801 USA	Photosynthesis in a changing global environment
53. Craig Yendrek	Photosynthetic targets for improving crop tolerance to ozone	Craig R. Yendrek, Global Change and Photosynthesis Research Unit, Agricultural Research Service, USDA, Urbana, IL 61801 USA Elizabeth A. Ainsworth, Global Change and Photosynthesis Research Unit, Agricultural Research Service, USDA, Urbana, IL 61801 USA, Department of Plant Biology, University of Illinois, Urbana-Champaign, Urbana, IL 61801 USA	Photosynthesis in a changing global environment
54. Charilaos Yiotis	The Devonian challenge	Charilaos Yiotis, University College Dublin; Christiana Evans-Fitzgerald, University College Dublin; Tracy Lawson, University of Essex; Jennifer C. McElwain, University College Dublin	Photosynthesis in a changing global environment
127. RYO YOKOYAMA	Identification and characterization of novel factors involved in induction of non-photochemical quenching in Arabidopsis.	Ryo Yokoyama, Kyoto University; Hiroshi Yamamoto, Kyoto University; Satomi Takeda, Osaka Prefecture University; Yoichiro Fukao, Nara Institute of Science and Technology; Toshiharu Shikanai, Kyoto University	Electron and proton transfer
188. Sunny Yoo	Two-dimensional electronic spectroscopy of Peridinin Chlorophyll Protein	Sunny Yoo(1,2), Jan Alster(2), Roger Hiller(3), *Donatas Zigmantas(2) 1 Department of Energy Science, Sungkyunkwan University, Suwon 440-746, Korea 2 Department of Chemical Physics, Lund University, Getingevägen 60, 22241, Lund, Sweden 3Department of Biological Science, Faculty of Science, Macquarie University, Sydney NSW, Australia	Light harvesting
227. Hiroaki Yoshino	Complete disruption of phylloquinone biosynthesis in Thermosynechococcus elongatus for biophotosensor.	Hiroaki Yoshino, University of Tokyo; Yasunori Inoue, Tokyo University of Science; Masahiko Ikeuchi, University of Tokyo	Reaction center function

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311. Jingjie Yu	Synechococcus sp. UTEX 2973, a new cyanobacterial chassis for synthetic biology and metabolic engineering applications	Jingjie Yu, Michelle Liberton, Himadri Pakrasi, Washington University in St. Louis; Paul Cliften, Richard Head, Genome Technology Access Center, Washington University School of Medicine; Jerry Brand, UTEX The Culture Collection of Algae, University of Texas at Austin	Photosynthesis phenomics
278. Alonso Zavaleta Fernandez de Cordova	Looking for the primary site of photodamage: Evidence that whole spectrum of visible light affects Mn <sub>4</sub> CaO <sub>5</sub> upon strong illumination in enriched membranes isolated from spinach leaves.	Alonso Zavaleta Fernandez de Cordova, Research School of Biology - the Australian National University; Shunichi Takahashi, Research School of Biology - the Australian National University; Wah Chow, Research School of Biology - the Australian National University; Warwick Hillier, Research School of Biology - the Australian National University;	Water oxidation
128. Pengpeng Zhang	The functional assembly of phycocyanin is involved in multiple electron transfer pathways regulating photosynthesis in Synechocystis sp. PCC 6803.	Pengpeng Zhang, Louisiana State University Laurie K. Frankel, Louisiana State University Terry M. Bricker, Louisiana State University	Electron and proton transfer
189. Hao Zhang	Probing the Molecular Mechanism of Photoprotective Quenching in Cyanobacteria by Native Mass Spectrometry and Protein Cross-linking	Hao Zhang, Washington University Haijun Liu, Washington University Mindy Prado, Washington University Michael L. Gross, Washington University Robert E. Blankenship, Washington University	Light harvesting
279. Chunxi Zhang	The function and mechanism of TyrZ in Photosystem II	Chunxi Zhang, Institute of Chemistry, Chinese Academy of Sciences; Jian-Ren Shen, Okayama University; Yanan Ren, Institute of Chemistry, Chinese Academy of Sciences; Jingquan Zhao, Institute of Chemistry, Chinese Academy of Sciences;	Water oxidation
129. Nan Zhao	On the Nature of the Hydrogen Bonds to Neutral Ubiquinone in the QA Binding Site in Purple Bacterial Photo-synthetic Reaction Centers.	Nan Zhao and Gary Hastings* Georgia State University	Electron and proton transfer
55. Ahmad Zia	Protection of the photosynthetic apparatus during desiccation in resurrection plants	Ahmad Zia and Helmut Kirchhoff, Washington State University, Pullman, WA 99164, USA	Photosynthesis in a changing global environment
130. Yvonne Zilliges	Protonation Dynamics in Protein Function: Identification of key protonation sites and paths in photosynthetic water oxidation via site-directed mutagenesis of cyanobacterial photosystem II	Yvonne Zilliges, Freie Universität Berlin Elena Laufer, Freie Universität Berlin Nicoletta Bondar, Freie Universität Berlin Holger Dau, Freie Universität Berlin	Electron and proton transfer
131. Elena Zolotareva	Redox state of plastoquinone pool in Euglena gracilis under mixotrophic conditions	Viktoria M. Mokrosnop, Oleksandr V. Polishchuck, Elena K. Zolotareva, N.G. Kholodny Institute of Botany, NASU, Kyiv	Electron and proton transfer