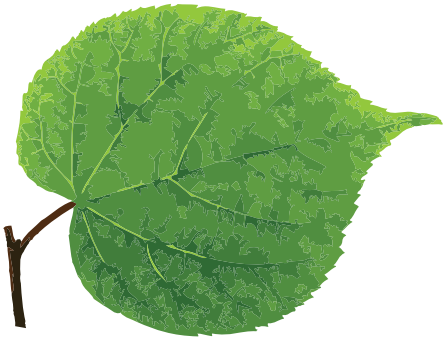

International Conference

Photosynthesis Research for Sustainability

in honor of Nathan Nelson and T. Nejat Veziroglu

June 19–25 2016
Pushchino, Russia

PROGRAMME

Schedule: Photosynthesis Research for Sustainability-2016

JUNE 18 (SATURDAY)

Arrival and accomodation

JUNE 19 (SUNDAY – 1ST DAY)

9:00–10:00 Registration

10:00–10:30 Opening Ceremony

Acad. Anatoly I. Miroshnikov, Chairman of the Pushchino Research Center;
Dr. Ivan Savintsev, The head of the Pushchino city;
Dr. Anatoly Tsygankov, President of Russian Society of Photobiology.

Pushchino Readings: 50 years of Institute of Biological Problems RAS (former Institute of Photosynthesis AS USSR)

Chairpersons: James Barber (UK), Govindjee (USA), Julian J. Eaton-Rye (New Zealand), Suleyman Allakhverdiev (Russia)

10:30–10:50 **Vladimir A. Shuvalov** *(Academician, Director of the Institute of Basic Biological Problems, RAS).* On the history of the Institute of Basic Biological Problems RAS and Pushchino Readings on Photosynthesis

10:50–11:30 **Andrey B. Rubin** *(Corr. Member of RAS, Department of biophysics, Biological Faculty, Lomonosov Moscow State University, Moscow).* Problems of biophysics and mechanisms of primary photosynthetic reactions

Events in honor of Prof. Nathan Nelson and T. Nejat Veziroglu

11:30–12:00 **Govindjee**. In honor of Prof. Nathan Nelson and T. Nejat Veziroglu

12:00–13:30 (90 min) Lunch

Chairpersons: Ada Yonath (Israel), John H. Golbeck (USA),
Leslie Dutton (USA), Kimiyuki Satoh (Japan), Norio Murata (Japan)

13:30–14:00 **Ada Yonath** *(Nobel Laureate in Chemistry, 2009; Department of Structural Biology, Weizmann Institute, Rehovot, Israel)*. Key issues in contemporary medicine, the microbiome and environmental sustainability

14:00–14:30 **Nathan Nelson** *(Department of Biochemistry and Molecular Biology, Tel Aviv University, Tel Aviv, Israel)*. Half century of scientific wandering – Freedom, Serendipity and Joy

14:30–15:00 **William A. Cramer** *(Department of Biological Sciences, Purdue University, USA).* On the mechanism of state transitions: redox- and structure- dependent interaction *in vitro* between Stt7 kinase and the cytochrome b_6f complex

15:00–15:30 **Rachel Nechushtai** *(The Alexander Silberman Institute of Life Sciences and the Institute of Chemistry, The Hebrew University of Jerusalem, Jerusalem, Israel)*. Photosystem I: From protein composition to photo-bio-nano-electronics, a personal prespective dedicated to prof. Nathan Nelson

15:30–15:50 (20 min) Coffee break

Chairpersons: Norio Murata (Japan), Govindjee (USA),
Arvi Freiberg (Estonia)

15:50–16:20 **John H. Golbeck** *(Department of Biochemistry and Molecular Biology, The Pennsylvania State University, PA, USA).* Charge separation in *Heliobacterium modesticaldum*: An exemplar of an early homodimeric type I photosynthetic reaction center

16:20–16:50 **Arvi Freiberg** *(Institute of physics and institute of molecular and cell biology, University of Tartu, Tartu, Estonia).* Structural constraints for excitation energy migration and trapping in photosynthetic bacteria

16:50–17:20 **Michael Hippler** *(IBBP, WWU Münster, Germany).* Calredoxin – a novel calcium-dependent sensor-responder connected to regulation of photosynthesis

Chairpersons: Kintake Sonoike (Japan), Marián Brestic (Slovakia), Marek Živčák (Slovakia), Kentaro Ifuku (Japan), Olaf Kruse (Germany), Gadi Schuster (Israel), Iftach Yacoby (Israel), Seiji Akimoto (Japan), Eugene Maksimov (Russia), Rajagopal Subramanyam (India), Vasiliy Goltsev (Bulgaria), Tatsuya Tomo (Japan)

17:20–20:00 Poster viewing (Library on the first floor)

JUNE 20 (MONDAY – 2ND DAY)

Chairpersons: James Barber (UK), Julian J. Eaton-Rye (New-Zealand), Barry Bruce (USA)

8:00–8:30 **Govindjee** *(University of Illinois at Urbana-Champaign, Urbana, USA).* Towards efficient photosynthesis: Overexpression of C4 enzymes in C3 plants: A case study

8:30–9:00 **Norio Murata** *(National Institute for Basic Biology, Okazaki, Japan).* ATP is the driving force of the repair of photosystem II during photoinhibition: Important role of cyclic electron transport

9:00–9:30 **Leslie Dutton** *(The Johnson Research Foundation, School of Medicine, University of Pennsylvania, Philadelphia, PA, USA).* First principles design of water-soluble photochemical proteins engineered for solar energy conversion in living cells

9:30–9:55 **Julian J. Eaton-Rye** *(Department of Biochemistry, University of Otago, Dunedin, New Zealand).* Bicarbonate-reversible inhibition of the iron-quinone acceptor complex of photosystem II lacking low-molecular-weight proteins or with targeted mutations to the D1 protein

9:55–10:15 (20 MIN) COFFEE BREAK

Chairpersons: Hiroshi Ishikita (Japan), Galina Riznichenko (Russia), Alexey Semenov (Russia)

10:15–10:45 **James Barber** *(Department of Life Sciences, Sir Ernst Chain Building, South Kensington Campus, Imperial College London, UK).* The Mn_4Ca-catalyst of the photosynthetic oxygen evolving centre: structure, function and evolution.

10:45–11:10 **Thomas Friedrich** *(Technical University of Berlin, Institute of Chemistry, Berlin, Germany).* From bacteriophytochromes to iRFP: Optimization of fluorescence by "local" and "remote" amino acid substitutions

11:10–11:35 **Avigdor Scherz** *(Department of Plant and Environmental Sciences, The Weizmann Institute of Science, Rehovot, Israel).* Small residues control protein-gated electron transfer in photosynthetic reaction centers

11:35–12:00 **Alexander Tikhonov** *(Department of Biophysics, Physical Faculty, Moscow State University).* Electron and proton transport coupled to ATP synthesis in chloroplasts: Lateral heterogeneity of the proton potential

12:00–13:30 (90 min) Lunch

Chairpersons: Kintake Sonoike (Japan), Thomas Friedrich (Germany), Avigdor Scherz (Israel)

13:30–13:55 **Peter Hegemann** *(Humboldt-Universität zu Berlin, Germany)* Optogenetics, a technology with Russian Scientific roots: Channelrhodopsin and new inhibitory optogenetic approaches

13:55–14:20 **Győző Garab** *(Biological Research Center, Hungarian Academy of Sciences, Szeged, Hungary).* Roles of non-bilayer lipids and non-lamellar lipid phases in the assembly and structural dynamics of thylakoid membranes

14:20–14:45 **Hiroshi Ishikita** *(Research Center for Advanced Science and Technology, The University of Tokyo, Tokyo, Japan).* Energetics of proton release on the first oxidation step in the water oxidizing enzyme

14:45–15:10 **Alexey Semenov** *(Belozersky Institute of Physical-Chemical Biology, Moscow State University, Moscow, Russia).* Charge recombination in photosystem I under conditions of restricted protein mobility

15:10–15:35 **Barry Bruce** *(University of Tennessee at Knoxville, Knoxville, TN, USA).* Characterization of a non-detergent isolated form of a cyanobacterial trimeric photosystem I using styrene-maleic acid co-polymers

15:35–15:50 (15 min) Coffee break

Chairpersons: Iftach Yacoby (Israel), Tatsuya Tomo (Japan), Kimiyuki Satoh (Japan)

15:50–16:15 **Agepati S. Raghavendra** *(University of Hyderabad, Hyderabad, India).* Biochemical and molecular basis of modulation by oxidative stress of photorespiratory components

16:15–16:40 **Olaf Kruse** *(Bielefeld University, Faculty of Biology, Center for Biotechnology (CeBiTec), Bielefeld, Germany).* Elucidating the regulatory network of light harvesting in photoheterotrophic microalgae

Chairpersons: Anatoly Tsygankov (Russia), Olaf Kruse (Germany), Martin Winkler (Germany)

16:40–17:10 **Rick L. Garcia** *(LI-COR Biosciences USA).* Sponsor's presentation. Exploring the power of parallel measurements of electron transport, CO_2 and H_2O flux in plant leaves

17:10–19:05 **Brent Claassen and Rick L. Garcia** *(LI-COR Biosciences USA).* Practical work-shop from the sponsor: Further dialogues concerning the new LI-COR LI-6800 portable photosynthesis system and the power of parallel measurements of electron transport, CO_2 and H_2O flux in plant leaves. Room 114, follow arrows on the wall

Chairpersons: Kintake Sonoike (Japan), Marián Brestic (Slovakia), Marek Živčák (Slovakia), Kentaro Ifuku (Japan), Olaf Kruse (Germany), Gadi Schuster (Israel), Iftach Yacoby (Israel) Seiji Akimoto (Japan), Eugene Maksimov (Russia), Rajagopal Subramanyam (India), Vasiliy Goltsev (Bulgaria), Tatsuya Tomo (Japan)

17:10–18:30 Poster viewing (Library on the first floor)

19:05–21:00 Get together evening

JUNE 21 (TUESDAY – 3RD DAY)

Tours

Moscow, Yasnaya Polyana

JUNE, 22 (WEDNESDAY – 4TH DAY)

Section: Neutron Scattering in Photosynthesis Research

Chairpersons: Jörg Pieper (Estonia), Chris Garvey (Australia), Gergely Nagy (Switzerland)

8:00–8:25 **Jörg Pieper** *(Institute of Physics, University of Tartu, Tartu, Estonia).* Excitonic coupling and protein dynamics in the water-soluble chlorophyll protein (WSCP)

8:25–8:50 **Christopher Garvey** *(Australian Nuclear Science and Technology Organisation, Lucas Heights, NSW, Australia).* Deuteration as a tool to understand photosynthetic membrane organisation in the cyanobacterium *Halomicronema hongdechloris*

8:50–9:15 **Robert Corkery** *(Royal Institute of Technology, Stockholm, Sweden. Australian National University, Canberra, Australia).* Small angle neutron scattering studies of photosynthetic membrane structures in cyanobacteria

9:15–9:40 **Henrich Frielinghaus** *(Jülich Centre for Neutron Science, Forschungszentrum Jülich GmbH, Garching, Germany).* Wood structure during pretreatment in ionic liquids

9:40–9:55 (15 min) Coffee break

9:55–10:20 **Gergely Nagy** *(Paul Scherrer Institute, Villigen, Switzerland; Wigner Research Centre for Physics, Hungarian Academy of Sciences, Budapest, Hungary).* Structure and dynamics of photosynthetic membranes as studied by neutron scattering

10:20–10:45 **Maksym Golub** *(Institute of Physics, Tartu University, Tartu, Estonia; University of Joseph Fourier, Grenoble, France).* Combined SAXS-SANS structure study of isolated PS II core complex

Chairpersons: Tatsuya Tomo (Japan), Suleyman Allakhverdiev (Russia), Kimiyuki Satoh (Japan)

10:45–11:10 **Mariko Miyachi** *(Department of Chemistry, School of Science, The University of Tokyo, Tokyo, Japan).* Fabrication of bio-conjugate photosystems using reconstituted photosystem I and II with molecular wires

11:10–11:35 **Daisuke Nii** *(Department of Physics, Tokyo University of Science, Tokyo, Japan).* Formation of biohybrid device between photosysten I and carbon material

11:35–12:55 (80 min) Lunch

Chairpersons: Yukako Hihara (Japan), Kentaro Ifuku (Japan), Agepati S. Raghavendra (India)

12:55–13:20 **Kintake Sonoike** *(Department of Biology, Waseda University, Tokyo, Japan).* Variation of redox state of plastoquinone pool in cyanobacteria revealed by photochemical quenching and non-photochemical quenching of chlorophyll fluorescence

13:20–13:45 **Miwa Sugiura** *(Proteo-Science Research Center, Ehime University, Bunkyo-cho, Matsuyama, Ehime, Japan).* Role of D1-pro173 of photosystem II in water oxidation

13:45–14:10 **Galina Riznichenko** *(Moscow State University, Moscow, Russia).* Kinetic and computer multiparticle modeling of photosynthetic regulation

14:10–14:35 **Keisuke Saito** *(Research Center for Advanced Science and Technology, The University of Tokyo, Tokyo, Japan).* Energetics of the proton transfer from tyrosine D in photosystem II: Comparison with tyrosine Z

14:35–15:00 **Seiji Akimoto** *(Molecular Photoscience Research Center, Kobe University, Kobe, Japan).* Changes in light-harvesting and energy-transfer processes under different growth conditions

15:00–15:15 (15 min) Coffee break

Chairpersons: Miwa Sugiura (Japan), Daisuke Seo (Japan), Franz-Josef Schmitt (Germany)

15:15–15:40 **Kentaro Ifuku** *(Graduate School of Biostudies, Kyoto University, Sakyo-ku, Kyoto, Japan).* Evolution and function of the OEC family proteins in chloroplasts

15:40–16:05 **Yukako Hihara** *(Graduate School of Science and Engineering, Saitama University, Saitama, Japan).* A feed-forward loop consisting of the response regulator RpaB and the small RNA PsrR1 controls light acclimation of photosystem I gene expression in *Synechocystis* sp. PCC 6803

16:05–16:30 **Hisashi Ito** *(Institute of Low Temperature Science, Hokkaido University, Sapporo, Japan).* Chlorophyll degradation by Mg-dechelatase

16:30–16:55 **Daisuke Seo** *(Division of Material Science, Graduate School of Natural Science and Technology, Kanazawa University, Kakuma, Kanazawa, Ishikawa, Japan).* Comparative study on reaction kinetics of $NADP^+$/H reduction/oxidation catalyzed by ferredoxin-NAD(P)H oxidoreductases from photosynthetic and non-photosynthetic bacteria

16:55–17:20 **Zach Adam** *(The Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture, The Hebrew University, Rehovot, Israel).* DEG proteases in the thylakoid lumen and their role in response to stress

17:20–17:45 **Marc M. Nowaczyk** *(Plant Biochemistry, Ruhr University Bochum, Bochum, Germany).* Light-driven whole-cell biocatalysis with recombinant cyanobacteria

17:45 Group Photo

Chairpersons: Kintake Sonoike (Japan), Marián Brestic (Slovakia), Marek Živčák (Slovakia), Kentaro Ifuku (Japan), Olaf Kruse (Germany), Gadi Schuster (Israel), Iftach Yacoby (Israel) Seiji Akimoto (Japan), Eugene Maksimov (Russia), Rajagopal Subramanyam (India), Vasiliy Goltsev (Bulgaria), Tatsuya Tomo (Japan)

18:00–20:00 Poster viewing/discussion (Library on the first floor)

20:00–21:00 Chamber music

Artists: The member of Spivakov's orchestra Anastasia Kosarskaya (oboe) and laureate of international contests Vera Kryukova (piano);

Music by Johann Sebastian Bach, Robert Shuman, Camille Saint-Saëns, Ottorino Respighi, Manuel Ponce

JUNE 23 (THURSDAY – 5TH DAY)

Chairpersons: Anatoly Tsygankov (Russia), Olaf Kruse (Germany), Patrick Hallenbeck (Canada)

8:00–8:15 **Alexander Yu. Ramenskiy** *(President of Russian National Hydrogen Energy Association).* Standardization of hydrogen technologies and fuel cells in the Russian Federation

8:15–8:35 **Alexander Gusev** *(General Director STC "TATA" Limited).* Innovative technologies of the hydrogen economy and alternative energy for sustainable development

8:35–8:50 **Dmitry Dunikov** *(Joint Institute for High Temperatures, RAS, Moscow, Russia).* Russian R&D in Hydrogen Energy

8:50–9:20 **T. Nejat Veziroglu** *(President of International Association for Hydrogen Energy, Miami, FL, USA).* Global solution to global problems

9:20–9:45 **Patrick C. Hallenbeck** *(Département de microbiologie, infectiologie et immunologie, Université de Montréal, Montréal. Canada; Life Sciences Research Center, Department of Biology United States Air Force Academy, USAF Academy, Colorado USA).* Challenges in sustainable algal biofuels production

9:45–10:10 **Iftach Yacoby** *(Laboratory for Renewable Energy Studies. Department of Molecular Biology and Ecology of Plants, Tel Aviv University, Tel Aviv, Israel).* Continuous hydrogen production in air grown micro-algae

10:10–10:25 (15 min) Coffee break

Chairpersons: Mariko Miyachi (Japan), Tatsuya Tomo (Japan), Giuseppe Torzillo (Italy)

10:25–10:50 **Giuseppe Torzillo** *(Istituto per lo Studio degli Ecosistemi, Sesto Fiorentino, Firenze, Italy).* Constraints in the scale-up of photobiological hydrogen production with microalgae

10:50–11:15 **Vinzenz Bayro Kaiser** *(Tel Aviv University, Tel Aviv, Israel).* Temperature-sensitive PSII: toward a sustainable bioreactor for photosynthetic hydrogen production

11:15–11:40 **Martin Winkler** *(Department of Plant Biochemistry, Photobiotechnology group, Ruhr-University, Bochum, Germany).* 2D-Tailoring of [FeFe]-Hydrogenases for Applications

11:40–12:05 **Evelina Slavcheva** *(Institute of Electrochemistry and Energy Systems, Bulgaria).* Composite oxide supported catalysts for hydrogen production in anion exchange membrane electrolysis cells

12:05–13:35 (90 min) Lunch

Chairpersons: Keisuke Saito (Japan), Eugene Maksimov (Russia), Rajagopal Subramanyam (India)

13:35–13:55 **Azat V. Abdullatypov** *(Institute of Basic Biological Problems, RAS, Pushchino, Russia).* Oxygen diffusion pathways through HydSL hydrogenase from *Thiocapsa roseopersicina*

13:55–14:15 **Zinaida Eltsova** *(Institute of Basic Biological Problems, RAS, Pushchino, Russia).* Hydrogen production by *Rhodobacter sphaeroides* mutants without LHII complex

14:15–14:35 **Alena Volgusheva** *(Moscow State University, Moscow, Russia).* Acclimation of *C. reinhardtii* to magnesium deficiency: Establishment of anoxia at high photosynthetic activity

14:35–14:50 **Alexey Kazakov** *(Joint Institute for High Temperatures, RAS, Moscow, Russia; Green Energy Development Center, Feng Chia University, Taichung, Taiwan).* Joint Russian-Taiwan project for biohydrogen production and purification

14:50–15:10 **Gadi Schuster** *(Faculty of Biology, Technion, Haifa, Israel).* Harnesing photosynthesis for solar energy conversion and hydrogen generation: Building a bio-generator

15:10–15:30 **George Sytchev** *(Joint Institute for High Temperatures of the Russian Academy of Sciences, Moscow, Russia).* Multipurpose technology of natural gas pyrolysis for the hydrogen energetics

15:30–15:50 **Franz-Josef Schmitt** *(Institute of Physical Chemistry, Technical University of Berlin, Berlin, Germany).* Fluorescent proteins as biosensors for studying the activity of hydrogenases and intracellular pH

15:50–16:05 (15 min) Coffee break

Chairpersons: Seiji Akimoto (Japan), Jóse A. Navarro (Spain), Azat Abdullatypov (Russia)

16:05–16:25 **Rajagopal Subramanyam** *(Department of Plant Sciences, School of Life Sciences, University of Hyderabad, Hyderabad, India).* Role of stt7 kinase in acclimatization and organization of photosynthetic apparatus to salt in *Chlamydomonas reinhardtii*

16:25–16:45 **Arjun Tiwari** *(Department of Biochemistry, Molecular Plant Biology, University of Turku, Turku, Finland).* Photosystem I in photochemical and non-photochemical quenching of excitation energy

16:45–17:05 **Marina Kozuleva** *(Institute of Basic Biological Problems, RAS, Pushchino, Russia)*. A new insight into mechanisms of oxygen photoreduction in the photosynthetic chain

17:05 Special Events

Committee: James Barber (UK), Ada Yonath (Israel), T. Nejat Veziroglu (USA), Tatsuya Tomo (Japan), Govindjee (USA), Anatoly Tsygankov (Russia), Suleyman Allakhverdiev (Russia)

Young Talents (8+8 awards/prizes)

The awards will be presented to young researchers who have done outstanding research in the field of photosynthesis research for sustainability and biohydrogen. All young researchers, including Ph.D. students and Post-Docs, may compete for awards.

Winners will be selected by the committee (see above), according to recommendation of chairpersons of poster sections.

19:00 Banquet

JUNE 24 (FRIDAY – 6TH DAY)

Chairpersons: Alena Volgusheva (Russia), Mahir Mamedov (Russia), Norio Murata (Japan)

9:00–9:25 **Lyudmila Vasilieva** *(Institute of Basic Biological Problems, RAS, Pushchino, Russia)*. BChl ligation in bacterial photosynthetic reaction center: possible options

9:25–9:50 **Alexander Krasnovsky Jr.** *(A.N. Bach Institute of Biochemistry (Biotechnology Center, RAS) and M.V. Lomonosov Moscow University, Moscow, Russia)*. Phosphorescence studies of the plant photosynthetic apparatus

9:50–10:15 **Victor Nadtochenko** *(Institute of Chemical Physics, RAS, Moscow, Russia)*. Ultrafast charge separation events in Photosystem I *Synechocystis* sp. PCC 6803 under excitation of the Q_Y band red side: The mechanism of long-wavelength limit of photochemical energy conversion in Photosystem I

10:15–10:35 (20 min) Coffee break

Chairpersons: Lyudmila Vasilieva (Russia),
Rajagopal Subramanyam (India), Alexander Krasnovsky Jr (Russia).

10:35–11:00 **José A. Navarro** *(Instituto de Bioquímica Vegetal y Fotosíntesis, cicCartuja, Universidad de Sevilla-CSIC, Sevilla, Spain).* The photosynthetic cytochrome C550 from the diatom *Phaeodactylum tricornutum*

11:00–11:25 **Dmitry A. Cherepanov** *(Institute of Physical Chemistry and Electrochemistry, RAS, Moscow, Russia).* Dielectric behavior of the photosynthetic bacterial reaction center evaluated by the langevin and kirkwood-fröhlich models using molecular dynamics simulations

11:25–11:50 **Konstantin Neverov** *(A.N. Bach Institute of Biochemistry, Biotechnology Center, RAS, Moscow, Russia).* Chlorophyll triplet state in isolated PS II reaction centers and core complexes: Low temperature phosphorescence study

11:50–13:20 (90 min) Lunch

Chairpersons: Dmitry A. Cherepanov (Russia),
Alexander Krasnovsky Jr. (Russia), Vladimir Sukhov (Russia)

13:20–13:45 **Mahir Mamedov** *(Belozersky Institute of Physical-Chemical Biology, Moscow State University, Moscow, Russia).* Trehalose effects on real-time kinetics of electrogenic reactions due to catalytic cycle of water oxidizing complex of Photosystem II

13:45–14:10 **Eugene Lysenko** *(Institute of Plant Physiology RAS, Moscow, Russia).* Thylakoids win the competition for cadmium within plant chloroplasts

14:10–14:35 **Jianguo Liu** *(Institute of Oceanology CAS, Qingdao, China).* The multiple changes of photosynthetic behaviors, the role of photorespiration during the astaxanthin accumulation in *Haematococcus pluvialis* grown outdoors in tubular photobioreactors

14:35–15:00 **Alexei Solovchenko** *(Department of Bioengineering, Faculty of Biology, Moscow State University, Moscow, Russia).* Red or dead: Photosynthetic acclimation in a carotenogenic microalga *Haematococcus pluvialis* under stress

15:00–15:25 **Roman Pishchalnikov** *(Prokhorov General Physics Institute, RAS, Moscow, Russia).* Red exciton states: Localization in the photosystem I trimer complexes of *Arthrospira platensis* and their role in energy transfer

15:25–15:45 Coffee break

Chairpersons: Mahir Mamedov (Russia), Anjana Jajoo (India), Eugene Maksimov (Russia)

15:45–16:10 **Dmitry Zlenko** *(Moscow State University, Moscow, Russia).* Molecular model of PBS core and PBS association with photosystems

16:10–16:35 **Eugene Maksimov** *(Department of Biophysics, Faculty of Biology, Moscow State University, Moscow, Russia).* Construction of a photoactive fluorescence sensor from the Orange Carotenoid Protein

16:35–17:00 **Vladimir Sukhov** *(N. I. Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, Russia).* Proton signal as probable mechanism of photosynthetic response induced by variation potential in higher plants

17:00–17:25 **Nataly Belyaeva** *(Moscow State University, Moscow, Russia).* Thylakoid model parameters fitted to photosynthetic induction data

17:25 Closing Ceremony

James Barber (UK), Norio Murata (Japan), William Cramer (USA), Kimiyuki Satoh (Japan), Győző Garab (Hungary), Leslie Dutton (USA), Govindjee (USA), Suleyman Allakhverdiev (Russia), Tatsuya Tomo (Japan), Anatoly Tsugankov (Russia)

JUNE 25 (SATURDAY – 7TH DAY)

10:00–13:00

Excursions to Institutes of Pushchino Research Center.

Departure

Poster Session Schedule

JUNE 19

Section 1.1: Primary Processes of Photosynthesis

S1.1 Light-harvesting complexes from purple sulfur bacteria with modified *in vitro* carotenoid composition
Alexander Ashikhmin, Zoya Makhneva, Maksim Bolshakov, and Andrey Moskalenko

S1.2 Effect of light absorbed by carotenoids on growth of purple sulfur bacterium *Alc. vinosum*
Maksim Bolshakov, Zoya Makhneva, Alexander Ashikhmin, and Andrey Moskalenko

S1.3 Femtosecond processes of charge separation in two mutant reaction centers of *Rhodobacter sphaeroides* with increased midpoint potential at cryogenic temperature
Anton Khristin, Maria Leonova, Vladimir Shuvalov, and Anton Khmelnitskiy

S1.4 Comparison of the recombination rate of charges and lifetime of tryptophan fluorescence in RCs of *Rb. sphaeroides* in the temperature range from −180 to 25°C
Petr Knox, E. P. Lukashev, B. N. Korvatovskii, V. V. Gorokhov, N. P. Grishanova, N. Kh. Seifullina, and Vladimir Z. Paschenko

S1.5 Comparison of the recombination rate of charges and lifetime of tryptophan fluorescence in RCs of *Rb. sphaeroides* in the temperature range from −180 to 25°C
Petr Knox, E. P. Lukashev, B. N. Korvatovskii, V. V. Gorokhov, N. P. Grishanova, N. Kh. Seifullina, and Vladimir Z. Paschenko

S1.6 Two-photon spectroscopy of the LH1 complex and its subunit B820
Andrei Razjivin, Alexander Solov'ev, Victor Kompanets, Sergey Chekalin, and Andrey Moskalenko

S1.7 Can LH1 complexes of purple bacteria be assembled with partial filling of carotenoid pockets?
Alexander Solov'ev, Alexander Ashikhmin, and Andrey Moskalenko

S1.8 Coherent intradimer events in reaction centers of *Rhodobacter sphaeroides*
Andrey Yakovlev and Vladimir Shuvalov

S1.9 Study of the spectral and electron-transfer properties of *Rhodobater sphaeroides* R-26 reaction centers under vacuum conditions
Aleksey Zabelin, Anton Khristin, Taygib Iliyasov, Valentina Shkuropatova, and Anatoly Shkuropatov

Section 1.2: Structure, Function and Biogenesis of the Photosynthetic Apparatus

S2.1 Thermostability of Photosystem I trimers and monomers from the cyanobacterium *Thermosynechococcus elongates*
Vladimir Shubin, Irina Terekhova, Yulia V. Bolychevtseva, Marta J. Kopczak, Eithar El-Mohsnawy, Matthias Rögner, Werner Maentele, and Enela Džafić

S2.2 Spectroscopic properties of the peripheral antennae from photosystem II
Alexander S. Belov and Daniil V. Khokhlov

S2.3 Evolution of metastable states in the process of plastocyanin and cytochrome *f* complex formation
Vladimir Fedorov, Sergei S. Khruschev, and Ilya Kovalenko

S2.4 The properties of two sources of carbonic anhydrase activity in photosystem II of higher plants
Lyudmila Ignatova, Elena Zhurikova, and Boris Ivanov

S2.5 Structural and functional features of photosynthetic apparatus of *Pinus sylvestris* in Baikal Siberia
Maria Ivanova and Galina Suvorova

S2.6 Simulation of electron transfer by plastocyanin in chloroplast thylakoid lumen by brownian dynamics
Ilya Kovalenko, Olga Knyazeva, Galina Riznichenko, and Andrey B. Rubin

S2.7 Molecular imprinted polymers in studying chlorophyll-protein interactions and development of sensors to determine herbicides
Mikhail Khristin

S2.8 Participation of carbonic anhydrase alpha-4 in the development of non-photochemical chlorophyll fluorescence quenching in *Arabidopsis thaliana*
Elena Zhurikova, Lyudmila Ignatova, Vilen Mudrik, and Boris Ivanov

Section 1.3: Photosystem II and Water Oxidation Mechanism

S3.1 Automatization of analysis of movement trajectories of small molecules in photosystem II
Bulat Fatkhullin and Azat Gabdulkhakov

S3.2 Involvement of molecular oxygen in the donor-side photoinhibition of Mn-depleted photosystem II membranes
Andrey Khorobrykh and Vyacheslav Klimov

S3.3 Spectral characteristics of photosystem II complexes isolated from chlorophyll *f* containing cyanobacterium
Toshiyuki Shinoda, Min Chen, Suleyman I. Allakhverdiev, and Tatsuya Tomo

S3.4 EPR and Fluorescence investigations of Fe cation interaction with Mn-binding sites in Mn-depleted PS II membranes
Boris Semin, Lira Davletshina, Jyotishman Dasgupta, G. Charles Dismukes, and Michael Seibert

S3.5 Trehalose induced stimulation of oxygen photoconsumption and electron transfer in manganese-depleted photosystem II preparations
Denis Yanykin, Andrey Khorobrykh, Mahir Mamedov, and Vyacheslav Klimov

Section 1.4: Energy Transfer and Trapping in Photosystems

S4.1 Energy migration in model quantum dot – aluminum phthalocyanine system
Daniil Gvozdev, Evgeniy Maksimov, M. G. Strakhovskaya, and Vladimir Z. Paschenko

S4.2 Characterization of the putative ferredoxin binding sites on photosystem I
Pini Marcu and Iftach Yacoby

S4.3 Excitation energy transfer in phycobiliproteins of *Acaryochloris marina* investigated by site-selective spectroscopy
Jörg Pieper, M. Rätsep, G. Gryliuk, S. Hildebrandt, K.-D. Irrgang, and H.-J. Eckert

S4.4 Accurate simulation of hole burning and fluorescence line-narrowing spectra
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