

# «PHOTOBIOCHEMISTRY: PROBLEMS AND PERSPECTIVES»

**October 10-11, 2013**

International Conference in Honor of 100<sup>th</sup> Anniversary of  
**Academician A.A. Krasnovsky**

*Blue Hall of the Headquarters Building  
of the Russian Academy of Sciences  
Leninsky prospect, 32a, Moscow*

## **Organizers**

Division of Biological Sciences RAS  
A.N. Bach Institute of Biochemistry RAS  
Institute of Basic Problems of Biology RAS  
Biology Faculty of M.V. Lomonosov MSU  
Scientific Council on Biochemistry RAS  
Scientific Council on Plant Physiology and Photosynthesis RAS  
Scientific Council on Biophysics RAS  
Russian Photobiology Society  
Russian Foundation of Basic Research

## Organizing committee

*Chairman V.O. Popov*, Corresponding member RAS, A.N. Bach Institute of Biochemistry RAS.

*Co-chairman N.V. Karapetyan*, Professor, A.N. Bach Institute of Biochemistry RAS.

*Secretary N.P. Yurina*, Professor, A.N. Bach Institute of Biochemistry RAS.

## Honorary Members

*J. Barber*, FRS. Professor, Imperial College, London, UK.

*R.E. Blankenship*, Professor, Washington University in St. Louis, USA.

*Govindjee*, Professor, University of Illinois at Urbana-Champaign, USA.

*M. Rögnér*, Professor, Ruhr University Bochum, Germany.

*J.W. Schopf*, Member of the National Academy of Sciences USA, Professor, University of California Los Angeles, USA.

*G.R. Seely*, Professor, USA.

*M.V. Alfimov*, Academician RAS, Center of Photochemistry RAS.

*R.A. Gasanov*, Professor, Baku State University, Azerbaijan.

*M.P. Kirpichnikov*, Academician RAS, M.V. Lomonosov Moscow State University.

*F.F. Litvin*, Professor, M.V. Lomonosov Moscow State University.

*V.P. Skulachev*, Academician RAS, A.N. Belozersky Institute of Physico-Chemical Biology of Moscow State University.

*A.S. Spirin*, Academician RAS, Institute of Protein Research RAS, Pushchino.

*I.A. Tarchevsky*, Academician RAS, Institute of Biochemistry and Biophysics RAS, Kazan.

*Yu.A. Vladimirov*, Academician RAMS, M.V. Lomonosov Moscow State University.

## Members

*V.A. Shuvalov*, Academician RAS, Institute of Basic Problems of Biology RAS, Pushchino.

*M.A. Ostrovsky*, Academician RAS, N.M. Emanuel Institute of Biochemical Physics RAS.

*A.B. Rubin*, Corresponding member RAS, Biology Faculty of M.V. Lomonosov Moscow State University.

*Yu.E. Erokhin*, Professor, Institute of Basic Problems of Biology RAS.

*V.V. Klimov*, Professor, Institute of Basic Problems of Biology RAS.

*A.A. Krasnovsky Jr.*, Professor, A.N. Bach Institute of Biochemistry RAS.

*M.S. Kritsky*, Professor, A.N. Bach Institute of Biochemistry RAS.

*A.F. Orlovsky*, Ph.D., A.N. Bach Institute of Biochemistry RAS,

*I.V. Sharova*, Ph.D., A.N. Bach Institute of Biochemistry RAS.

# Program

## October 10, 2013 (Thursday)

### 9.00-10.00 Registration

#### 10.00. OPENING SESSION

**V.O. Popov** Chairman's Introductory Words

Greetings from the Russian Academy of Sciences

**J. Barber** (ISPR Past President) Greetings from International Society of Photosynthesis Research

#### 10.30-11.30 First session Chairman V.O. Popov

10.30-11.00 **Govindjee** (University of Illinois at Urbana-Champaign, USA)  
The Great Masters of the Past: Photochemists, Biochemists, and Biophysicists

11.00-11.30 **A.A. Krasnovsky Jr.** (A.N. Bach Institute of Biochemistry RAS)  
A Lifetime Journey with Photobiochemistry (memories)

*Coffee Break 11.30-12.00*

#### 12.00-13.30 Second session Chairman J. Barber

12.00-12.30 **R.E. Blankenship** (Washington University in St. Louis, USA)  
Photosynthetic Antennas: The First Step in Biological Solar Energy Conversion

12.30-13.00 **V.A. Shuvalov** (Institute of Basic Problems of Biology RAS)  
Charge Separation in the Reaction Centers of Photosynthetic Organisms

13.00-13.30 **J.H. Golbeck** (The Pennsylvania State University)  
The First Steps in Charge Stabilization in Photosystem I

*Lunch 13.30 - 14.30*

#### 14.30 – 16.15 Third session Chairman J.W. Schopf

14.30-15.00 **J. Barber** (Imperial College London, UK)  
From Natural to Artificial Photosynthesis

15.00-15.30 **M. Rögner** (Ruhr University Bochum, Germany) Engineering  
Photosynthetic Hydrogen Production in Cyanobacterial Cells

15.30-16.00 **N.V. Karapetyan** (A.N. Bach Institute of Biochemistry RAS)  
Photoprotective Energy Dissipation by Photosynthetic Apparatus of Cyanobacteria

16.00-16.10 Film about acad. A.A. Krasnovsky and his laboratory

#### 16.30-19.00 Party (Winter Garden)

## October 11, 2013 (Friday)

### 10.00 – 12.30 Fourth session Chairman Govindjee

- 10.00-10.30 **A.B. Rubin** (M.V. Lomonosov Moscow State University)  
Regulation of the Photobiochemical Processes in Photosynthesis
- 10.30-11.00 **J.W. Schopf** (UCLA, USA)  
Geological Evidence of the Origin of Oxygen-producing Photosynthesis and the Biotic Response to the 2.4-2.2 Ga «Great Oxidation Event»
- 11.00-11.30 **V.V. Klimov** (Institute of Basic Problems of Biology RAS, Pushchino)  
Photosystem II and Photosynthetic Oxidation of Water
- 11.30-12.00 **A.Yu. Semenov** (A.N. Belozersky Institute of Physico-Chemical Biology of M.V. Lomonosov Moscow State University)  
The Asymmetrical Primary Electron Transfer in Photosystem I from Cyanobacteria

*Coffee Break 12.00-12.30*

### 12.30 – 14.00 Fifth session Chairman V.A. Shuvalov

- 12.30-13.00 **M.A. Ostrovsky** (N.M. Emanuel Institute of Biochemical Physics RAS)  
Rhodopsin: Photobiochemistry, Physiology, and Pathology of vision
- 13.00-13.30 **M.S. Kritsky** (A.N. Bach Institute of Biochemistry RAS)  
Model of Flavin-Based Prebiotic Photophosphorylation
- 13.30-14.00 **Yu.A. Vladimirov** (M.V. Lomonosov Moscow State University)  
Excited States and Free Radicals

**CONFERENCE CLOSING**