

Dr. ALEXANDER N. MELKOZERNOV

Alexander Melkozernov, PhD
Academic Professional
College of Integrative Sciences and Arts
Science and Mathematics
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PROFESSIONAL PROFILE

- More than 10 yrs of college experience in teaching lecture, laboratory courses and recitations in Chemistry (General Chemistry, Organic Chemistry, Biochemistry, Physical Chemistry, Analytical Chemistry and Instrumental Analysis) and Biology (Molecular and Cellular Biology, Microbiology, Biochemistry). Adaptable educator who can manage, advise and facilitate diverse student groups
- Ph.D.-level experienced researcher with extensive training and expertise in the field of Biophysical Chemistry and Biochemistry with specific interests in bioenergy storage in photosynthesis, excitation energy and electron transfer in photosynthetic proteins and structure-functional relationship in photosynthetic supercomplexes, evolution of photosynthesis
- Efficient oral and written skills proven by a record of publications and oral presentations for diverse state, national and international audiences. Skilled in concise writing with different levels of details and generalization. Strong editorial skills with ability to manage large writing projects from inception through completion/publication
- Scientific Program Manager with 3.9 years experience in responsible managing of the research Center's finances, managing communication among Center's researchers, facilitating and organizing Center events, administering and developing content for the Center website, data collection for scientific reporting, and preparation of scientific and management reports
- Extensive software proficiency covering wide variety of applications, including office administration, graphics, spreadsheets, communication, engineering software, 3D molecular visualization, development and management of websites based on Content Management Systems, financial electronic databases

EDUCATION

- **Ph.D. in Biology (Biophysics), 1990**, Institute of Biophysics, Russian Academy of Sciences, Pushchino, Russia
- **M.S. in Biology, 1983**, Perm State University, Department of Biology, Perm, Russia

Dr. A. N. Melkozernov – Curriculum Vitae

PROFESSIONAL EXPERIENCE

08/2017 – present	<p>Instructional Professional, <i>College of Integrative Sciences and Arts, Arizona State University - Polytechnic, Mesa, AZ</i></p> <ul style="list-style-type: none">• Chemistry Program Leader, chemistry scheduler• Teaching Chemistry and Biology Curriculum for the Unit including Lecture, Laboratory courses and recitations (General Chemistry, Organic Chemistry, Biochemistry, Molecular and Cellular Biology)<ul style="list-style-type: none">✓ Facilitation of the student's discussion in recitation classes (CHM116)✓ Student's engagement in laboratory hands-on experience and lab group communication for active learning (CHM113, 116, 235, 238, BCH367)✓ Delivering lecture through series of conceptual blocks with intermittent group activities and collecting active learning feedback using i-clickers (CHM 116 Lecture, ABS311 Molecular and Cellular Biology)✓ Using online active teaching technologies (sync and async Zoom, Perusall, Turning points/i-clicker)• Management of CHM116 and BCH367 Development Canvas sites
08/2015 – 07/2017	<p>Adjunct Faculty, <i>College of Science, Engineering and Technology, Grand Canyon University, Phoenix, AZ</i></p> <ul style="list-style-type: none">• Teaching<ul style="list-style-type: none">✓ General Chemistry Lecture (CHM116)✓ General Chemistry Lab (CHM113 and CHM115)✓ Microbiology Lecture (BIO205)✓ General Biology Lab (BIO181)• Mentoring<ul style="list-style-type: none">✓ Mentoring prospect high school student on bioinformatics research project and preparation for national science fair
08/2014 – 7/2015	<p>Instructor, <i>Department of Chemistry and Biochemistry, Arizona State University, Tempe, AZ</i></p> <ul style="list-style-type: none">• Teaching<ul style="list-style-type: none">✓ Facilitates student's learning through collaborative problem solving in General Chemistry Recitation (CHM116 and CHM114)✓ Teaches inquiry based General Chemistry laboratory (CHM116)• Administrative assignments:<ul style="list-style-type: none">✓ Leads a team of recitation instructors and teaching assistants through work coordination at weekly staff meetings✓ Manages Blackboard websites for General Chemistry Courses (maintaining interactive syllabus, communication with students, coordination between lecture and recitation class, coordination of help resources for students)✓ Maintains the Mastering Chemistry website for the Chemistry recitation course (creating course, scheduling activities online, assigning groups in a roster)✓ Management of the gradebook for the recitation (table assignments, downloading Mastering Chemistry gradebook; coordinating with graders and generating final grades; timely uploading the grades to Blackboard Gradebook)

Dr. A. N. Melkozernov – Curriculum Vitae

12/2010 – 8/2014	<p>Program Manager, Center for Bio-Inspired Solar Fuel Production, Department of Chemistry and Biochemistry, Arizona State University, Tempe, AZ</p> <ul style="list-style-type: none">✓ Adapts to position, which requires activity in many areas, from science to administration✓ Responsible management and daily monitoring of finances and personnel of the research Center with \$14 million operational budget✓ Contributes to Center teamwork and cooperation by managing communication among Center Principal Investigators (13) and researchers (50+), maintaining and developing the Center website (http://solarfuel.clas.asu.edu), facilitating information exchange, managing and organizing the Center events (seminars, retreats, meetings and poster sessions)✓ Makes timely and well-considered decisions and develops efficient working plans for successful implementation of the projects under deadline pressure✓ Timely completion of reports to Federal Agencies✓ Efficiently and inclusively communicates to a diverse group of people with different cultural backgrounds
08/2008 – 11/2010	<p>Instructor, Department of Chemistry and Biochemistry, Arizona State University, Tempe, AZ</p> <ul style="list-style-type: none">• Teaching<ul style="list-style-type: none">✓ Manages Physical Chemistry teaching lab and delivers lectures on Physical Chemistry Experiment✓ Facilitates student's learning through collaborative problem solving in technology enhanced environment (General Chemistry)• Course Development<ul style="list-style-type: none">✓ Designs teaching materials for laboratory courses and guided inquiry assignments for collaborative learning groups.• Administrative assignments:<ul style="list-style-type: none">✓ Leads a team of recitation instructors and teaching assistants through work coordination at weekly staff meetings✓ Manages Blackboard websites for General Chemistry Courses
08/2007 - 07/2008	<p>Faculty Associate, Department of Chemistry and Biochemistry, Arizona State University, Tempe, AZ</p> <ul style="list-style-type: none">• Teaching Lectures (General Chemistry, Biochemistry, Analytical Chemistry) and Laboratory Courses (Analytical Chemistry, Instrumental Analysis)<ul style="list-style-type: none">✓ Managed Blackboard based online learning environment which helped maintaining an interactive syllabus, communication with students, class information resources and online assessment tools.✓ Managed and supervised teams of teaching assistants involved in teaching of lecture classes with large student enrollment through regular meetings, discussion of all aspects of teaching and training on development of instruction materials, assessment tools, maintaining the online websites of the course.✓ Managed teaching labs (equipment and reagent purchase; laboratory safety issues)✓ Supervised honor students✓ Designed lecture materials, instructional modules for the labs and assessment tools• Served as chemistry advisor; advised undergraduate students on curriculum, involved in course equivalency evaluation, trained in <i>PeopleSoft</i> administrative and student information system

Dr. A. N. Melkozernov – Curriculum Vitae

12/2002 - 07/2008	<p>Research Associate Professor, <i>Department of Chemistry and Biochemistry, Arizona State University, Tempe, AZ</i></p> <ul style="list-style-type: none">• Planned, designed and implemented experimental studies on energy transfer mechanisms in photosynthetic reaction centers• Managed research grants with \$335K operating budget including financial record keeping (<i>Advantage</i>), leading a research personnel in a day-to-day implementation of tasks, coordinated efforts among multiple research personnel, generating reports to federal agencies, communicating with federal agency officers, research leadership and a network of collaborators on progress of interdisciplinary research projects and making recommendations for future efforts and priorities• Communicated results and conclusions through oral presentations at scientific meetings, national and international conferences, provided detailed written reports, and submitted manuscripts published in peer-reviewed journals
12/1998 – 11/2002	<p>Research Associate, <i>Department of Chemistry and Biochemistry, Arizona State University, Tempe, AZ</i></p> <ul style="list-style-type: none">• Demonstrated success in optical spectroscopy of photosynthetic proteins including time-resolved absorption, fluorescence, linear and circular dichroism• Successfully used in vitro reconstitution of the eukaryotic antenna proteins from overexpressed apoproteins and HPLC purified chlorophylls and carotenoids to target functionally significant pigments responsible for the specific spectral and kinetic signatures.• Established correlations between multiple lifetime components of the overall fluorescence decay in the PSI supercomplexes from green algae and plants and in isolated structural constituents.• Analyzed pathways of excitation energy transfer in isolated light-harvesting complexes of Photosystem I from higher plants using time-resolved spectroscopy
02/1996 – 12/1998	<p>Postdoctoral Fellow, <i>Department of Chemistry and Biochemistry, Arizona State University, Tempe, AZ</i></p> <ul style="list-style-type: none">• Studied photosynthetic bioenergy convertors by ultrafast absorption and fluorescence spectroscopy and involved in successful competitive research• Obtained extensive training in ultrafast time-resolved absorption, picosecond fluorescence spectroscopy, and biochemical techniques of membrane protein isolation
12/1986 – 01/1996	<p>Research Scientist, <i>Institute of Biochemistry and Physiology of Microorganisms, Russian Academy of Sciences, Pushchino, Russia</i></p> <ul style="list-style-type: none">• Developed express-method of rapid assessment of bacterial viability after cryopreservation based on DNA fluorescent probes• Developed computer database on microbial preservation methods, which helped to solve the problem of fast selection and retrieval of adequate methods
06/1994 - 07/1994 06/1995 - 07/1995	<p>Instructor, <i>Undergraduate Program on Biophysical and Biochemical methods, Biology Department, Moscow State University - Pushchino Campus, Russia</i></p> <ul style="list-style-type: none">• Instructed laboratory course “Linear dichroism spectroscopy”• Developed and wrote a teaching manual for the Lab

Dr. A. N. Melkozernov – Curriculum Vitae

09/1994 - 12/1994 02/1995 - 06/1995	Teaching Assistant , <i>Educational Center for Microbiology and Biotechnology, Pushchino State University, Pushchino, Russia</i> <ul style="list-style-type: none">Instructed laboratory course on Physico-Chemical Methods in Microbial Physiology for undergraduate students. Responsible for all aspects of teaching and evaluation.
12/1983 - 12/1986	Graduate Research Associate , <i>Institute of Soil Science and Photosynthesis, Russian Academy of Sciences, Pushchino, Russia</i> <ul style="list-style-type: none">Conducted independent research on spectroscopy of solar energy converters in photosynthetic bacteria, which helped to elucidate key kinetic parameters of the bacterial reaction center and resulted in defense of a PhD thesisObtained experience in laser induced spectroscopy, hole-burning spectroscopy and cryogenic techniques

TEACHING EXPERIENCE

Lectures:

- General Chemistry I (Fall 2007, Spring 2008)*
- General Chemistry II (Summer 2016, Spring 2017, Summer 2020)*
- Molecular and Cellular Biology (Fall 2021)*
- Principles of Biochemistry (upper level, Spring 2007, Spring 2008)*
- Microbiology (Summer 2017)*
- Analytical Chemistry (upper level, Fall 2007)*

Laboratory Courses:

- General Chemistry I (Fall 2015, Fall 2016, 2017 - present)*
- General Chemistry II (Fall 2014, Spring 2015, Spring 2016, Summer 2016, 2017 - present)*
- Organic Chemistry (2017 – present)*
- Elementary Biochemistry Lab (Fall 2019 – present)*
- Physical Chemistry (upper level, Spring 2009)*
- Instrumental Analysis (upper level, Spring 2008)*
- Analytical Chemistry (upper level, Fall 2007)*
- Biology I (Fall 2016, Fall 2017)*
- Linear dichroism spectroscopy, Summer 1994, 1995*
- Physico-Chemical Methods in Microbial Physiology, Fall 1994, Spring 1995*

Recitation/Discussion:

- CHM101 Introduction to General Chemistry collaborative learning, Fall 2009*
- CHM113 General Chemistry I collaborative learning, Fall 2008, Fall 2009*
- CHM116 General Chemistry II collaborative learning, Spring 2010, Summer 2010, Fall 2014, Spring 2015*
- CHM114 General Chemistry for Engineers collaborative learning, Fall 2008, Fall 2009, Fall 2014, Spring 2015*
- CHM117 and CHM118 General Chemistry for Majors collaborative learning, Spring 2010, Fall 2010*

COMPUTER SKILLS

- Computer-proficient in a wide range of software applications including

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- ✓ Electronic databases including training in PeopleSoft and Advantage financial system
 - ✓ Microsoft Office (Word, Excel, PowerPoint)
 - ✓ Adobe Acrobat applications, Graphics design (Adobe Photoshop, Illustrator)
 - ✓ Development and management of websites (Drupal - Content Management Systems, Dreamweaver, HTML, Front Page)
 - ✓ Engineering software (Matlab, Mathcad)
 - ✓ 3D molecular visualization and molecular model computing (MDL Chime, Swiss-Pdb-Viewer, Accelrys DS Visualizer)
- Computational skills including compartmental kinetic and spectral modeling

AWARDS, HONORS

- Project Manager, United State Department of Agriculture NRI/CSREES award 2003-35318-13665 “Energy coupling in PSI supercomplexes” (2003 – 2007) (RE Blankenship, Co-PI).
- Project Manager, United State Department of Agriculture NRI/CSREES award 2001-35318-1110 “Pathways of excitation energy transfer in light-harvesting complexes of Photosystem I from higher plants” (2001 – 2003) (RE Blankenship, Co-PI).
- Co-PI of National Science Foundation research grant 0417142 “Structure and function of supercomplexes of photosystem I with its peripheral antenna systems in green algae and cyanobacteria.” (P. Fromme, PI, and A.N. Webber, Co-PI)(2004 – 2010)
- Skryabin Award, Institute of Biochemistry and Physiology of Microorganisms, Pushchino, Russia, 1995
- Winner of All-Union (National) Student Science Competition in Biology, Moscow, Russia, 1980
- Academician A.N. Bakh Stipend, Perm State University, 1980-1983
- Graduated *summa cum laude*, Perm State University, Perm, Russia, 1983

PROFESSIONAL ACTIVITIES

- Special Science editor for a special issue of Artificial Intelligence and Society Journal in Collaboration with V. Sorensen based on workshop “Bio-Art/Design: Transdisciplinarity in Art, Science and Creativity,” Singapore, March 7–8, 2016.
- Reviewer of the “The Biophysics of Photosynthesis. Biophysics for the Life Sciences”, Golbeck, J., van der Est, A. (eds), Vol. 11, Springer, Heidelberg, *In press* (2014)
- Reviewer of the “Biochemistry: The Molecular Basis of Life” by T McKee and JR McKee, 5th Ed, Oxford University Press
- Translation from English to Russian: “Photosynthesis. Energy Conversion by Plants and Bacteria”, Govindjee, Ed. Published in Russian by Mir Publisher, 1987, Litvin, F., Krasnovsky, A., Sr., eds of the Russian translation
- Interpreting from Russian to English for participants of the science workshop “Advanced Chemistry, Nanotechnology, Research Managements and Innovations”, Arizona State University, December 4-17, 2010
- *Ad Hoc* reviewer of manuscripts submitted to Biochemistry (3 articles), BioEssays (1 article), FEBS Letters (2 articles), Biochimica et Biophysica Acta (1 article), DNA Sequence (1 article), Biophysical Journal (5 articles), Journal of Physical Chemistry B (2 articles), Photosynthesis Research (8 articles), Journal of Photochemistry and Photobiology B (1 article).
- Member, International Society of Photosynthesis Research

SCIENTIFIC PUBLICATIONS

R – refereed paper; **IR** – invited review; **B** – chapter in book; **CP** – conference proceedings

1. Alexander N. Melkozernov, Vibeke Sorensen (2020) What drives bio-art in the twenty-first century? Sources of innovations and cultural implications in bio-art/biodesign and biotechnology. AI & SOCIETY, <https://doi.org/10.1007/s00146-020-00940-0>, published online March 29, 2020 (**R**)

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2. Melkozernov, A.N. (2014) From Ionizing Radiation to Photosynthesis (Chapter 13). In: Golbeck, J., van der Est, A. (eds) *The Biophysics of Photosynthesis. Biophysics for the Life Sciences*, Vol. 11, Springer, Heidelberg. pp. 383-482 **(B, IR)**
<http://www.springer.com/physics/biophysics+%26+biological+physics/book/978-1-4939-1147-9>
3. Stefan A. Rensing, Daniel Lang, Andreas D. Zimmer, Astrid Terry, Asaf Salamov, Harris Shapiro, Tomoaki Nishiyama, Pierre-Francois Perroud, Erika A. Lindquist, Yasuko Kamisugi, Takako Tanahashi, Keiko Sakakibara, Tomomichi Fujita, Kazuko Oishi, Tadasu Shin-I, Yoko Kuroki, Atsushi Toyoda, Yutaka Suzuki, Shin-ichi Hashimoto, Kazuo Yamaguchi, Sumio Sugano, Yuji Kohara, Asao Fujiyama, Aldwin Anterola, Setsuyuki Aoki, Neil Ashton, W. Brad Barbazuk, Elizabeth Barker, Jeffrey L. Bennetzen, Robert Blankenship, Sung Hyun Cho, Susan K. Dutcher, Mark Estelle, Jeffrey A. Fawcett, Heidrun Gundlach, Kousuke Hanada, Alexander Heyl, Karen A. Hicks, Jon Hughes, Martin Lohr, Klaus Mayer, **Alexander Melkozernov**, Takashi Murata, David R. Nelson, Birgit Pils, Michael Prigge, Bernd Reiss, Tanya Renner, Stephane Rombauts, Paul J. Rushton, Anton Sanderfoot, Gabriele Schween, Shin-Han Shiu, Kurt Stueber, Frederica L. Theodoulou, Hank Tu, Yves Van de Peer, Paul J. Verrier, Elizabeth Waters, Andrew Wood, Lixing Yang, David Cove, Andrew C. Cuming, Mitsuyasu Hasebe, Susan Lucas, Brent D. Mishler, Ralf Reski, Igor V. Grigoriev, Ralph S. Quatrano,* Jeffrey L. Boore (2008) *The Physcomitrella Genome Reveals Evolutionary Insights into the Conquest of Land by Plants*. SCIENCE, vol. 319, no. 5859, pp.64-69 **(R)**
4. Melkozernov, A.N. and Blankenship, R.E. (2006) Photosynthetic functions of Chlorophylls. In *Chlorophylls and Bacteriochlorophylls: Biochemistry, Biophysics, Functions and Applications* (Grimm, B., Porra, R., Rüdiger, W., and Scheer, H., Eds.), Vol 25 of *Advances in Photosynthesis and Respiration Series* (ISBN 1-4020-4515-8) Editor: Govindjee. Springer, Dordrecht, pp. 397–412 **(B, IR)**
5. Fromme, P., Yu, H.Q., DeRuyter, Y.S., Jolley, C., Chauhan, D.K., Melkozernov, A.N., and Grotjohann, I. (2006) Structure of photosystems I and II. *Comptes Rendus Chimie* 9, 188-200 **(R)**
6. Melkozernov, A.N., Barber, J., and Blankenship, R.E. (2006) Light-harvesting in Photosystem I supercomplexes. *Biochemistry* 45, 331 - 345 **(R, IR)**
7. Melkozernov, A.N. and Blankenship, R.E. (2005) Structural and functional organization of the peripheral light-harvesting system in Photosystem I. *Photosynth. Res.*, 85, 33-50 **(R, IR)**
8. Melkozernov, A.N., Kargul, J., Lin, S., Barber, J., and Blankenship, R.E. (2005) Spectral and kinetic analysis of the energy coupling in the PSI-LHCI supercomplex from the green alga *Chlamydomonas reinhardtii* at 77 K. *Photosynth. Res.*, 86, 203-215 **(R)**
9. Melkozernov, A.N., Kargul, J., Lin, S., Barber, J., and Blankenship, R.E. (2005) Excited State Dynamics in the PSI-LHCI Supercomplex from *Chlamydomonas reinhardtii*: Excitation Wavelength Dependence Study. In *Photosynthesis: Fundamental Aspects to Global Perspectives* (van der Est, A., and Bruce, D., Eds.), Vol. 1, Allen Press Inc., Lawrence, Kansas, pp. 178 - 180 **(CP)**
10. Melkozernov, A.N., Kargul, J., Lin, Su, Barber, J., and Blankenship, R.E. (2004) Energy coupling in the PSI-LHCI supercomplex from the green alga *Chlamydomonas reinhardtii* *J. Phys. Chem. B*, 108, 10547-10555 **(R)**
11. Ilagan, R.P., Shima, S., Melkozernov, A.N., Lin, S., Blankenship, R.E., Hiller, R.G., Birge, R.R., and Frank, H.A. (2004) Spectroscopic properties of the main-form and high-salt peridinin-chlorophyll a-proteins from *Amphidinium carterae*. *Biochemistry*, 43, 1478-1487 **(R)**
12. Fromme, P., Melkozernov, A.N., Jordan, P., and Krauss, N. (2003) Structure and Function of Photosystem I: Interaction with its soluble electron carriers and external antenna systems. *FEBS Lett.*, 555, 40-44 **(IR, R)**
13. Melkozernov, A.N., and Blankenship, R.E. (2003) Structural modeling of the Lhca4 subunit of LHCI-730 peripheral antenna in photosystem I based on similarity with LHCII. *J. Biol. Chem.*, 278: 44542-44551 **(R)**
14. Melkozernov, A.N., Bibby, T.S., Lin, Su, Barber, J., and Blankenship, R.E. (2003) Time-resolved absorption and emission show that CP43' antenna ring of iron-stressed *Synechocystis sp.* PCC 6803 is efficiently coupled to the Photosystem I reaction center core. *Biochemistry*, 42, 3893-3903 **(R)**
15. Melkozernov, A.N., Lin, Su, Schmid, V.H.R., Paulsen, H., and Blankenship, R.E. (2002) Excitation energy transfer in Lhca1 subunit of the LHCI-730 subpopulation of photosystem I peripheral antenna. *J. Phys. Chem. B*, 106, 4313-4316 **(R)**
16. Melkozernov, Su Lin, V.H.R. Schmid, E. Lago-Places, H. Paulsen, R.E. Blankenship (2001) Molecular origin of red pigments in the peripheral light-harvesting antenna of Photosystem I: Ultrafast absorption spectroscopy of recombinant Lhca4, *Proc. XIIth Inter. Congress Photosynthesis*, Brisbane, Australia, 18-23 August, 2001 **(CP)**

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17. Gibasiewicz, K., Ramesh, V.M., Melkozernov, A.N., Lin, Su, Woodbury, N.W., Blankenship, R.E., and Webber, A.N. (2001) Excitation dynamics in the core antenna of PS I from *Chlamydomonas reinhardtii* CC2696 at room temperature. *J. Phys. Chem. B*, 105, 11498-11506 (R)
18. Melkozernov, A.N. (2001) Excitation energy transfer in photosystem I from oxygenic organisms. *Photosynth. Res.*, 70, 129-154 (IR, R)
19. Melkozernov, A.N., Lin, Su, Blankenship, R.E. and Valkunas, L. (2001) Spectral inhomogeneity of Photosystem I and its influence on excitation equilibration and trapping in *Synechocystis sp.* PCC 6803 at 77 K. *Biophys. J.*, 81, 1144-1154 (R)
20. Melkozernov, A.N., Lin, Su, Schmid, V.H.R., Paulsen, H., Schmidt, G.W., and Blankenship, R.E. (2000) Ultrafast excitation dynamics of low energy pigments in reconstituted peripheral light-harvesting complexes of Photosystem I. *FEBS Lett.*, 471, 89-92 (R)
21. Melkozernov, A.N., Lin, Su, and Blankenship, R.E. (2000) Femtosecond transient spectroscopy and excitonic interactions in Photosystem I. *J. Phys. Chem. B*, 104, 1651-1656 (R)
22. Melkozernov, A.N., Lin, Su, and Blankenship, R.E. (2000) Excitation dynamics and heterogeneity of energy equilibration in the core antenna of photosystem I from the cyanobacterium *Synechocystis sp.* PCC 6803. *Biochemistry*, 39, 1489-1498 (R)
23. Melkozernov, A.N., Lin, S., and Blankenship, R.E. (1998) Energy Equilibration in the Antenna of Photosystem I from the cyanobacterium *Synechocystis sp.* PCC 6803. In *Photosynthesis: Mechanisms and Effects*. Garab, G., Ed., Vol. I. Kluwer Academic Publishers, Dordrecht, The Netherlands, Vol. I, pp. 405-408 (CP)
24. Melkozernov, A.N., Schmid, V., Schmidt, G.R., and Blankenship, R.E. (1998) Energy redistribution in heterodimeric light-harvesting complex LHC I-730 of Photosystem I. *J. Phys. Chem. B*, 104, 8183-8189 (R)
25. Schweitzer, R., Melkozernov, A.N., Blankenship, R.E., and Brudwig, G. (1998) Time-resolved fluorescence measurements of Photosystem II: The effect of quenching by oxidized ChZ. *J. Phys. Chem. B*, 104, 8320-8326 (R)
26. Melkozernov, A.N., Olson, J.M., Li, Y.-F., Allen, J.P., and Blankenship, R.E. (1998) Exciton interactions and orientation of the Fenna-Matthews-Olson protein in the membranes of the green sulfur bacterium *Chlorobium tepidum*. *Photosynth. Res.*, 56, 315-328 (R)
27. Melkozernov, A.N., Su, H., Webber, A.N., and Blankenship, R.E. (1998) Excitation energy transfer in thylakoid membranes from *Chlamydomonas reinhardtii* lacking chlorophyll b and with mutant Photosystem I. *Photosynth. Res.*, 56, 197-207 (R)
28. Melkozernov, A.N., Hui Su, Su Lin, Bingham S., Webber A.N., and Blankenship R.E. (1997) Specific mutation near the primary donor in Photosystem I from *Chlamydomonas reinhardtii* alters the trapping time and spectroscopic properties of P700. *Biochemistry*, 36, 2898-2907 (R)
29. Mikhaleva N.I., Zolov S.N., Suzina N.E., Melkozernov A.N., Nesmeyanova M.A. (1995) Permeability of the *Escherichia coli* outer membrane to ethidium ions and periplasmic alkaline phosphatase during enhanced synthesis of the alkaline phosphatase. *Biochemistry (Moscow)*, 60, 881-887 (R)
30. Puchkov E.O., and Melkozernov A.N. (1995) Fluorimetric Assessment of *Pseudomonas fluorescens* viability with ethidium bromide as a probe after freeze-thawing. *Lett. Appl. Microbiol.*, 21, 368-372 (R)
31. Puchkov E.O., and Melkozernov A.N. (1994) Electrodifusion of ethidium cation into *Micrococcus luteus* cells. *Biochim. Biophys. Acta*, 1192, 112-116 (R)
32. Melkozernov A.N., Puchkov E.O., Bulashova N.A., Lysakov S.V. (1993) Computer database on methods of preservation of microorganisms. *BINARY: Computing in Microbiology*, 5, 62-65 (R)
33. Ganago A.O., Gubanov V.S., Klevanik A.V., Melkozernov A.N., Shkuropatov A.Ya., Shuvalov V.A. (1988) Comparative study of spectral and kinetic properties of electron transfer in purple and green photosynthetic bacteria. In: *Green Photosynthetic Bacteria* //Olson J.M., Ormerod J.G., Ames J., Stackebrandt E., Trüper H.G., eds. - New York and London: Plenum Press, p.109-117 (R).
34. Katz E.Yu., Shkuropatov A.Ya., Vagabova O.I., Melkozernov A.N., Ganago A.O., Shuvalov V.A. (1988) Polarography of the photoreduction of exogenous quinones by the reaction centers of the photosynthetic bacterium *Rhodospseudomonas sphaeroides* R-26. *Biophysics (Moscow)*, 33, 66-71 (R)
35. Katz E.Yu., Melkozernov A.N., Vagabova O.I., Korsunskii O.F., Shuvalov V.A. (1987) Electrochemical and photochemical study of N-methyl-rhodoquinones as exogenous electron acceptors in the reaction centers from photosynthetic bacterium *Rhodobacter sphaeroides* R-26. *Molecular Biology (Moscow)*, 21, 979-984 (R)
36. Ganago A.O., Drobin V.M., Melkozernov A.N., Trofimov V.N., Shuvalov V.A. (1987) Laser differential spectrophotometer for the study of photochemical reactions at cryogenic temperatures. *Journal of Applied Spectroscopy (Zhurnal Prikladnoi Spectroscopii)*, 46, 418-422 (R)

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37. Ganago A.O., Klevanik A.V., Melkozernov A.N., Shkuropatov A.Ya., Shuvalov V.A. (1988) Study of reaction centers of phototrophic bacteria by hole burning spectroscopy. Proceedings of the International Workshop "Laser Spectroscopy of Complex Molecules", Lohusalu, Estonia, p.24-25 (CP)
38. Shuvalov V.A., Shkuropatov A.Ya., Ismailov M.A., Shkuropatova V.A., Melkozernov A.N. (1987) Selective reduction and modification of bacteriochlorophylls and bacteriopheophytins in reaction centers from *Rhodospseudomonas viridis*. Biological Membranes (Moscow), 4, 1026-1035 (R)
39. Ganago A.O., Melkozernov A.N., Shuvalov V.A. (1986) Study of the reaction centers of the photosynthetic bacterium *Rhodospseudomonas sphaeroides* R-26 using "hole-burning spectroscopy". Biophysics (Moscow), 31, 481-485 (R)
40. Ganago A.O., Melkozernov A.N., Khristin M.S. (1985) Asymmetry of the subunit with molecular weight of 70,000 of the reaction center of Photosystem I from higher plants (1985) Biophysics (Moscow), 30, 640-645 (R)

INVITED TALKS AND ORAL PRESENTATIONS AT SEMINARS AND CONFERENCES

1. International symposium and workshop "Bio-Art/Eco-Art/Design: Transdisciplinarity in Art, Science and Creativity" March 7, 2016, Singapore (**KEYNOTE SPEAKER**)
What drives bio-art in the 21st century?
2. International Meeting "Photosynthesis in the Post-Genomic Era: Structure and Function of Photosystems", August 20 – 26, 2006, Pushchino, Russia:
Probing energy coupling in the PSI supercomplexes by time-resolved spectroscopy
3. Satellite Conference of the International Photosynthesis Congress, Photosynthetic Light-Harvesting Systems, Sainte-Adèle, Quebec, Canada, August 26 -29, 2004:
Energy transfer and trapping in the PSI-LHCI supercomplexes. (INVITED TALK)
4. 13th Western Photosynthesis Conference, January 8 – 11, 2004, Pacific Grove, Asilomar, CA : *Energy coupling in the PSI-LHCI supercomplex from green alga Chlamydomonas reinhardtii*
5. 12th Western Photosynthesis Conference, January 2 – 5, 2003, Pacific Grove, Asilomar, CA:
Energy coupling in the iron-stress induced CP43'-PSI supercomplex from the cyanobacterium Synechocystis sp. PCC 6803
6. Seminar at the Institute of Basic Biological Problems. Russian Academy of Sciences, Pushchino, Russia, July 2003:
Structure and Function of Photosystem I Supercomplexes (INVITED TALK)
7. 12th International Congress on Photosynthesis, Brisbane, Australia, August 18 – 23, 2001:
Origin of red pigments in peripheral light-harvesting antenna of Photosystem I. (INVITED TALK)
8. Satellite Meeting of the XIIIth International Photosynthesis Congress - Light-harvesting 2001, Surfers Paradise, Queensland, Australia, August 14 – 18, 2001:
Molecular origin of red pigments in peripheral light-harvesting antenna of Photosystem I: Ultrafast absorption spectroscopy of recombinant Lhca4. (INVITED TALK)
9. 9th Western Photosynthesis Conference, January 6 -9, 2000, Pacific Grove, Asilomar, CA: *Energy transfer in reconstituted photosystem I peripheral antenna.*
10. 7th Western Photosynthesis Conference, January 8 -11, 1998, Pacific Grove, Asilomar, CA:
Energy redistribution in heterodimeric light-harvesting complex LHC I-730 of Photosystem I
11. Photosynthesis/Biophotonics Seminar, Center for the Study of Early Events in Photosynthesis, Department of Chemistry, Arizona State University, October 23, 1997:
Energy Redistribution in Reconstituted Light-Harvesting Complex of Photosystem I. (INVITED TALK)
12. Seminar at the Institute of Biochemistry and Physiology of Microorganisms, Russian Academy of Sciences, Pushchino, Russia, February 1997:
Molecular Evolution of Photosynthesis (INVITED TALK)
13. Photosynthesis/Biophotonics Seminar, Center for the Study of Early Events in Photosynthesis, Department of Chemistry, Arizona State University, September 12, 1996:
Specific mutation near the primary donor in Photosystem I from Chlamydomonas reinhardtii alters the trapping time and spectroscopic properties of P700 (INVITED TALK)

POSTER PRESENTATIONS AT CONFERENCES

1. Melkozernov, A.N., Lin, Su, Su, H., Bingham, S., Webber, A.N., and Blankenship, R.E. Energy and Electron Transfer Processes in Photosystem I of the Site-directed Mutants of the Green Alga *Chlamydomonas reinhardtii*. Gordon Research Conference, August 4 – 9, 1996, New Hampton School, NH.
2. Melkozernov, A.N., Olson, J.M., and Blankenship, R.E. Orientation of the Fenna-Matthews-Olson (FMO) protein in membrane vesicles from the green sulfur bacterium *Chlorobium tepidum*. ESF Workshop on Green and Heliobacteria, August 31 – September 4, 1997, E.R.S.U. Residences, Urbino, Italy.
3. Melkozernov, A.N., Su, H., Lin, S., Bingham, S., Webber, A.W., and Blankenship, R.E. Spectroscopic consequences of the specific mutations near P700 in photosystem I from the green alga *Chlamydomonas reinhardtii*. 6th Western Photosynthesis Conference, January 9 -12, 1997, Pacific Grove, Asilomar, CA.
4. Melkozernov, A.N., Su, H., Webber, A.W., and Blankenship, R.E. Energy transfer and assembly of chlorophyll-protein complexes in thylakoid membranes from *Chlamydomonas reinhardtii* lacking chlorophyll *b* and with mutant photosystem I. Gordon Research Conference, August 3 – 8, 1997, Plymouth State College, NH.
5. Melkozernov, A.N., Su, H., Lin, S., Bingham, S., Webber, A.W., and Blankenship, R.E. Mutations Near the Primary Donor in Photosystem I from *Chlamydomonas reinhardtii* Alter the Trapping Time and Spectroscopic Properties of P700. US-Japan Symposium on Molecular Organization of Photosynthetic Antennas, November 12 – 16, 1997, Kailua-Kona, Hawaii.
6. Melkozernov, A.N., Lin, S., and Blankenship, R.E. Energy equilibration in the antenna of photosystem I from cyanobacterium *Synechocystis sp. PCC 6803*. 11th International Congress on Photosynthesis, August 17 - 22, 1998, Budapest, Hungary.
7. Melkozernov, A.N., Schmid, V.H.R., Schmidt, G.W., and Blankenship, R.E. Energy transfer and quenching in LHCl complexes. International workshop on light-harvesting systems, August 14 - 16, 1998, Tata, Hungary.
8. Melkozernov, A.N., Lin, S., and Blankenship, R.E. Excitation dynamics in the antenna of photosystem I from the cyanobacterium *Synechocystis sp. PCC 6803*. 8th Western Photosynthesis Conference, January 7 -10, 1999, Pacific Grove, Asilomar, CA.
9. Melkozernov, A.N., Lin, S., and Blankenship, R.E. Excitation dynamics in the Photosystem I core and reaction center. A time-resolved study. Gordon Research Conference, June 13-18, 1999, New England College, Henniker, NH.
10. Melkozernov, A.N., Lin, Su, Schmid, V.H.R., Paulsen, H., and Blankenship, R.E. Energy transfer and quenching in peripheral antenna of photosystem I. Gordon Research Conference, June 18 – 23, 2000, Kimball Union Academy, Meriden, NH.
11. Melkozernov, A.N., Lin, Su, Schmid, V.H.R., Lago-Places, E., Paulsen, H., and Blankenship, R.E. Towards understanding of the origin of red pigments in peripheral light-harvesting antenna of Photosystem I: Ultrafast absorption spectroscopy of site-directed mutants of Lhca4. 12th International Congress on Photosynthesis, August 18 – 23, 2001, Brisbane, Australia
12. Melkozernov, A.N., Lin, Su, Schmid, V.H.R., Lago-Places, E., Paulsen, H., and Blankenship, R.E. Molecular origin of red pigments in peripheral light-harvesting antenna of Photosystem I: Ultrafast absorption spectroscopy of recombinant Lhca4. Satellite Meeting of the XIIth International Photosynthesis Congress-Light-harvesting 2001, August 14 – 18, Surfers Paradise, Queensland, Australia
13. Melkozernov A., Lin S., Schmid V.H.R., Paulsen H., and Blankenship R.E. Energy transfer in the peripheral antenna of Photosystem I from higher plants: Excitation of Chl *b* and carotenoids in Lhca1. Gordon Research Conference, June 16 – 21, 2002, Rodger Williams University, Bristol, RI.
14. Melkozernov A., Schmid V.H.R., Lin S., Paulsen H., and Blankenship R.E. Excitation dynamics in the Lhca1 subunit of peripheral light-harvesting antenna of Photosystem I. 13th Inter-American Photochemical Society Meeting, January 2 -5, 2002, Tempe, AZ.
15. Melkozernov, A.N., Bibby, T.S., Lin, S., Barber, J., and Blankenship, R.E. Energy transfer and trapping in the iron-stress induced CP43'- PSI supercomplex from the cyanobacterium *Synechocystis sp. PCC 6803*. 47th Annual Meeting of the Biophysical Society, March 1 – 5, 2003, San Antonio, Texas.
16. Melkozernov, A.N., Lin, S., Bibby, T.S., Kargul, J., Barber, J., and Blankenship, R.E. Energy coupling in Photosystem I supercomplexes. Gordon Research Conference, June 22 – 27, 2003, Rodger Williams University, Bristol, RI.

Dr. A. N. Melkozernov – Curriculum Vitae

17. Melkozernov, A.N., Fromme, P., and Blankenship, R.E. Structural modeling of the PSI-LHCI complexes. Gordon Research Conference, June 22 – 27, 2003, Rodger Williams University, Bristol, RI.
18. Melkozernov, A.N., Kargul, J., Lin, S., Barber, J., and Blankenship, R.E. Energy transfer and trapping in the PSI-LHCI supercomplex from *Chlamydomonas reinhardtii*. Photosynthetic Light-Harvesting Systems, PS – 2004 Satellite conference, August 26 -29, 2004, Sainte-Adèle, Quebec, Canada
19. Melkozernov, A.N., Kargul, J., Lin, S., Barber, J., and Blankenship, R.E. Excited State Dynamics in the PSI-LHCI Supercomplex from *Chlamydomonas reinhardtii*: Excitation Wavelength Dependence Study. 13th International Congress on Photosynthesis, August 29 – September 3, 2004, Montreal, Canada.
20. Olson, T.L., Melkozernov, A.N., and Blankenship, R.E. The in vitro reconstitution and analysis of chlorophyll d-lhca4 complex. 14th Western Photosynthesis Conference, January 6 – 9, 2005, Pacific Grove, Asilomar, CA.
21. Melkozernov, A.N., Su Lin, Blankenship, R.E., Kargul, J., Duncan, J.L., Barber, J., and Schmid, V.R.H. Probing energy coupling in the PSI supercomplexes. International Meeting “Photosynthesis in the Post-Genomic Era: Structure and Function of Photosystems”, August 20 – 26, Pushchino, Russia