

Sergei Savikhin

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EDUCATION

- Ph.D. Physics, Tartu State University, Estonia (1991)
- M.S. Physics, *Summa cum laude*, Tartu State University, Estonia (1983)

EMPLOYMENT

- | | |
|--|--|
| Purdue University, Physics Department | – Assistant Professor (2001-present) |
| Ames Laboratory, US DOE | – Associate Scientist (1993-2001) |
| Ames Laboratory, US DOE | – Postdoct. Research Associate (1992-1993) |
| Institute of Physics, Estonian Academy of Sciences | – Scientist (1989-1992) |
| Institute of Physics, Estonian Academy of Sciences | – Junior Scientist (1983-1989) |

RESEARCH INTERESTS:

- Biophysical aspects of photosynthesis; structure-function relationships in photosynthetic proteins; the mechanisms of energy harvesting, transfer, transformation and accumulation by photosynthetic apparatus of green plants, bacteria and algae;
- Protein and DNA structure and dynamics studies by optical methods
- Development of artificial devices and systems that mimic the principles perfected by nature for millions of years (biomimetic devices);
- Development of optical biosensors;
- Development of new optical instruments for spectroscopy and detection of ultrafast processes

TEACHING

- PHYS 342L Modern Physics Lab (modified experiments, compiled and published new manuals)
- PHYS 271 Electricity and magnetism (honors)
- PHYS 221 Electricity, light, and modern physics
- PHYS 322 Optics
- SCI 190E Integrated Science (developed new course for Engineering students)
This is a new initiative within Multidisciplinary Education program supported by NSF.
- PHYS 172H Honors Mechanics (fall 2006)
- PHYS 590 Reading course on biophysics for graduate students joining the group

Lectures on Biophysics to high school students, undergraduate and graduate students, school teachers (outreach program)

AWARDS

Seeds of Excellence Award for the success in attracting large sponsored programs to Purdue (2004)
Ruth and Joel Spira Award for excellence in undergraduate teaching (2003)

MEMBERSHIP

American Physical Society
Biophysical Society of America
International Society of Photosynthesis Research

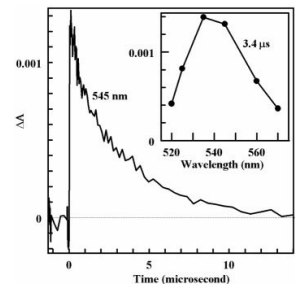
GRANTS

NSF, PI: Unique properties of chlorophyll in the cytochrome *b₆f* complex, NSF 0516939-MCB, 2005-2008.
NSF, Co-PI Reforming engineering education: a multidisciplinary engineering program. 2004-2007
USDA, Co-PI Multiplexed detection of pathogens using fluorescence resonance energy transfer in a spatial detection format, USDA 58-1935-9-010 (2003-2005)
PRF, PI: “Electron Transfer in Photosynthetic Reaction Centers“, Purdue Research Foundation. 2002-2004
DOE, Pending: “Novel photoprotection mechanism and structure of chlorosomes and artificial light-harvesting bacteriochlorophyll aggregates”, submitted to DOE, 2006
In preparation: Developing Biosensors to Detect Foodborne Microbial and Chemical Hazards. (USDA).

REFEREED PUBLICATIONS [1-55]

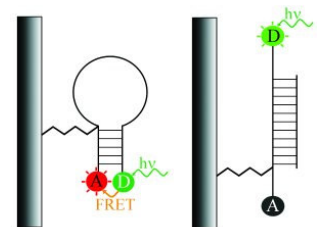
55. N. Dashdorj, E. Yamashita, J. Schaibley, W. A. Cramer, and S. Savikhin. Ultrafast Optical Studies of the Cytochrome b₆f Complex in Solution and Crystalline States. In: Photosynthesis 2007: Energy from the Sun. Eds.: J.F. Allen, B. Osmond, J. H. Golbeck, E. Gantt (2007), **in press**.
54. Yan, J., N. Dashdorj, S. Savikhin, and W.A. Cramer, *On the binding and function of the single chlorophyll a in the cytochrome b₆f complex*. 2007. **in preparation**.
53. Kim, H., H. Li, J.A. Maresca, D.A. Bryant, and S. Savikhin, *Triplet excitons in artificial light-harvesting aggregates of BChl c protect against singlet oxygen formation*. 2007. **in preparation**.
52. Dashdorj, N., E. Yamashita, J. Schaibley, W.A. Cramer, and S. Savikhin, *Ultrafast optical studies of the cytochrome b₆f complex in solution and in crystalline states*. 2007. **In press**.

51. Kim, H., H. Li, J.A. Maresca, D.A. Bryant, and S. Savikhin, *Triplet exciton formation as a novel photoprotection mechanism in chlorosomes of Chlorobium tepidum*. Biophys. J. 93:192-201 (2007).

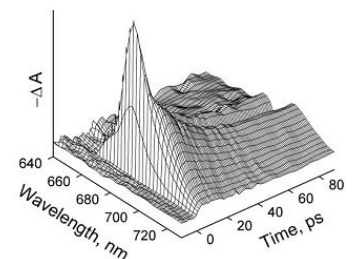


50. Perry, L., P. Heard, M. Kane, H. Kim, S. Savikhin, W. Dominquez, and B. Applegate, *Application of multiplex PCR to the detection of pathogens in food (Invited Review)*. Journal of Rapid Methods and Automation in Microbiology 15:176-198 (2007).

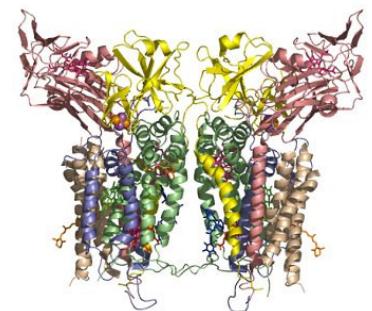
49. Kim, H., M.D. Kane, S. Kim, W. Dominquez, B.M. Applegate, and S. Savikhin, *A molecular beacon DNA microarray system for rapid detection of E. coli O157:H7 that eliminates the risk of a false negative signal*. Biosensors and Bioelectronics 22: p. 1041-1047 (2007).



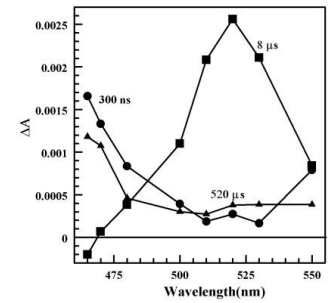
48. Savikhin, S., *Ultrafast spectroscopy of Photosystem I, in Photosystem I (invited chapter), The Light-Driven Plastocyanin: Ferredoxin Oxidoreductase*, J. Golbeck, Editor. (2006), Springer.



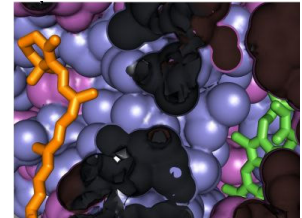
47. Cramer, W.A., H. Zhang, J. Yan, G. Kurisu, E. Yamashita, N. Dashdorj, H. Kim, and S. Savikhin, *Structure-function of the cytochrome b₆f: a design that has worked for three billion years (Invited review)*, in *Primary processes of photosynthesis: basic principles and apparatus*, G. Renger, Editor. (2007).



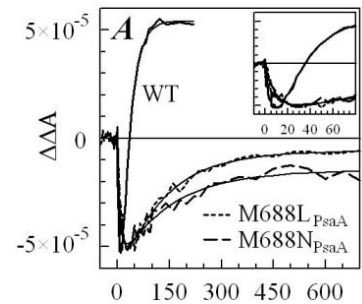
46. Kim, H., H. Zhang, N. Dashdorj, J. Yan, W.A. Cramer, and S. Savikhin, *Evidence for long range triplet state energy transfer from chlorophyll a to β -carotene in the cytochrome b_6f complex of oxygenic photosynthesis*, in *Photosynthesis: Fundamental aspects to global perspectives*, A. van der Est and D. Bruce, Editors. 2005, ACG Publishing: Lawrence. p. 432-434.



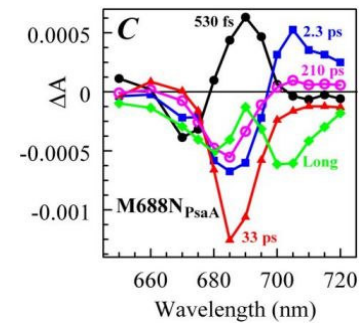
45. Kim, H., N. Dashdorj, H. Zhang, J. Yan, W.A. Cramer, and S. Savikhin, *An anomalous distance dependence of intraprotein chlorophyll-carotenoid triplet energy transfer*. *Biophys. J. Letters*, 2005. **89**: p. L28-L30.



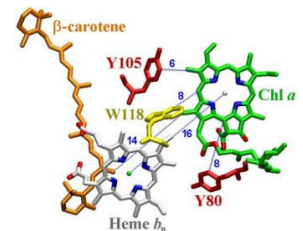
44. Dashdorj, N., W. Xu, R.O. Cohen, J.H. Golbeck, and S. Savikhin, *Probing the active electron transfer branch in the photosystem I reaction center from Synechocystis sp. PCC 6803*, in *Photosynthesis: Fundamental Aspects to Global Perspectives*, A. van der Est and D. Bruce, Editors. 2005, ACG Publishing: Lawrence. p. 30-33.



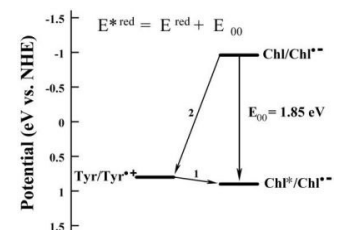
43. Dashdorj, N., W. Xu, R.O. Cohen, J.H. Golbeck, and S. Savikhin, *Asymmetric electron transfer in cyanobacterial photosystem I: charge separation and secondary electron transfer dynamics of mutations near the primary electron acceptor A_0* . *Biophys. J.*, 2005. **88**: p. 1238-1249.



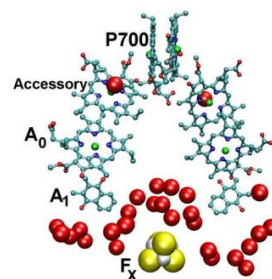
42. Dashdorj, N., H. Zhang, H. Kim, J. Yan, W.A. Cramer, and S. Savikhin, *The single chlorophyll a molecule in the cytochrome b_6f complex: unusual optical properties protect the complex against singlet oxygen*. *Biophys. J.*, 2005. **88**: p. 4178-4187.



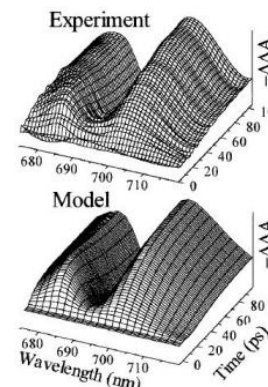
41. Dashdorj, N., H. Zhang, H. Kim, J. Yan, W.A. Cramer, and S. Savikhin, *Unusual optical properties of the monomeric chlorophyll a in the cytochrome b_6f complex of oxygenic photosynthesis*, in *Photosynthesis: Fundamental aspects to global perspectives*, A. van der Est and D. Bruce, Editors. 2005, ACG Publishing: Lawrence. p. 451-453.



40. Dashdorj, N., W. Xu, P. Martinsson, P.R. Chitnis, and S. Savikhin, *Electrochromic shift of chlorophyll absorption in photosystem I from Synechocystis sp. PCC 6803: a probe of optical and dielectric properties around the secondary electron acceptor*. *Biophys. J.*, 2004. **86**: p. 3121-3130.



39. Savikhin, S., W. Xu, P. Martinsson, P.R. Chitnis, and W.S. Struve, *Kinetics of charge separation and $A_0^- \rightarrow A_1$ electron transfer in photosystem I reaction centers*. *Biochemistry*, 2001. **40**: p. 9282-9290.



38. Savikhin, S., P. Martinsson, P.R. Chitnis, W. Johnson, W. Xu, and W.S. Struve, *The kinetics of primary electron transfer steps in PS I reaction center*, in *Ultrafast phenomena XII*, T. Elsaesser, et al., Editors. 2000, Springer: Berlin. p. 662-664.
37. Savikhin, S., W. Xu, P.R. Chitnis, and W.S. Struve, *Ultrafast primary processes in PS I from Synechocystis sp. PCC 6803: roles of P700 and A_0* . *Biophys. J.*, 2000. **79**: p. 1573-1586.
36. Soukoulis, V., S. Savikhin, W. Xu, P.R. Chitnis, and W.S. Struve, *Electronic spectra of PS I mutants: The peripheral subunits do not bind red chlorophylls in Synechocystis sp. PCC 6803*. *Biophys. J.*, 1999. **76**: p. 2711-2715.
35. Savikhin, S., W. Xu, V. Soukoulis, P.R. Chitnis, and W.S. Struve, *Ultrafast primary processes in photosystem I of the cyanobacterium Synechocystis sp. PCC 6803*. *Biophys. J.*, 1999. **76**: p. 3278-3288.
34. Savikhin, S., D.R. Buck, and W.S. Struve, *The Fenna-Matthews-Olson protein: a strongly coupled photosynthetic antenna*, in *Resonance energy transfer, (invited chapter)* D.L. Andrews and A.A. Demidov, Editors. 1999, John Wiley & Sons: New York. p. 399-434.
33. Savikhin, S., D.R. Buck, W.S. Struve, R.E. Blankenship, A.S. Taisova, V.I. Novoderezhkin, and Z.G. Fetisova, *Excitation delocalization in the bacteriochlorophyll c antenna of the green bacterium Chloroflexus aurantiacus as revealed by ultrafast pump-probe spectroscopy*. *FEBS Letters*, 1998. **430**: p. 323-326.
32. Savikhin, S., D.R. Buck, and W.S. Struve, *Toward level-to-level energy transfers in photosynthesis: the Fenna-Matthews-Olson protein (Featured Article)*. *J. Phys. Chem. B.*, 1998. **102**: p. 5556-5565.

31. Novoderezhkin, V.I., A.S. Taisova, Z.G. Fetisova, R.E. Blankenship, S. Savikhin, D.R. Buck, and W.S. Struve, *The B808-866 antenna of Chloroflexus aurantiacus: kinetic analogies to LH2 in purple photosynthetic bacteria*. Biophys. J., 1998. **74**(1-7).
30. Savikhin, S., D.R. Buck, and W.S. Struve, *Pump-probe anisotropies of Fenna-Matthews-Olson protein trimers from Chlorobium tepidum: A diagnostic for exciton localization?* Biophys. J., 1997. **73**: p. 2090-2096.
29. Savikhin, S., D.R. Buck, and W.S. Struve, *Oscillating anisotropies in a bacteriochlorophyll protein: Evidence for quantum beating between exciton levels*. Chem. Phys., 1997. **223**: p. 303-312.
28. Buck, D.R., S. Savikhin, and W.S. Struve, *Ultrafast absorption difference spectra of the FMO protein at 19 K: Experiment and simulations*. Biophys. J., 1997. **72**: p. 24-36.
27. Buck, D.R., S. Savikhin, and W.S. Struve, *Effect of diagonal energy disorder on circular dichroism spectra of Fenna-Matthews-Olson trimers*. J. Phys. Chem. B, 1997. **101**: p. 8395-8397.
26. Wu, H.-M., S. Savikhin, N.R.S. Reddy, R. Jankowiak, R.J. Cogdell, W.S. Struve, and G.J. Small, *Femtosecond and hole burning studies of B800's excitation energy relaxation dynamics in the LH2 antenna complex of Rhodospirillum rubrum (strain 10050)*. J. Phys. Chem., 1996. **100**: p. 12022-12033.
25. Savikhin, S. and W.S. Struve, *Temperature dependence of electronic energy transfers within B850 antennae of NF57 mutant of the purple bacterium Rhodospirillum rubrum*. Chem. Phys., 1996. **210**: p. 91-100.
24. Savikhin, S., Y. Zhu, R.E. Blankenship, and W.S. Struve, *Ultrafast energy transfer in chlorosomes from the green photosynthetic bacterium Chloroflexus aurantiacus*. J. Phys. Chem., 1996. **100**(9): p. 3320-3322.
23. Savikhin, S., Y. Zhu, R.E. Blankenship, and W.S. Struve, *Intraband Energy Transfers in the BChl c Antenna of Chlorosomes from the Green Photosynthetic Bacterium Chloroflexus aurantiacus*. J. Phys. Chem., 1996. **100**(45): p. 17978-17980.
22. Savikhin, S. and W.S. Struve, *Low-temperature energy transfer in FMO trimers from the green photosynthetic bacterium Chlorobium tepidum*. Photosynth. Res., 1996. **48**: p. 271-276.
21. Savikhin, S., P.I. van Noort, Y. Zhu, S. Lin, R.E. Blankenship, and W.S. Struve, *Ultrafast energy transfer in light-harvesting chlorosomes from the green sulfur bacterium Chlorobium tepidum*. Chem. Phys., 1995. **194**: p. 245-258.
20. Savikhin, S., P.I. van Noort, R.E. Blankenship, and W.S. Struve, *Femtosecond probe of structural analogies between light-harvesting chlorosome antennae and self-assembled bacteriochlorophyll aggregates*. Biophys. J., 1995. **69**(3): p. 1100-1105.
19. Savikhin, S., *Shot-noise-limited detection of absorbance changes induced by subpicosecond laser pulses in optical pump-probe experiments*. Rev. Sci. Instrum., 1995. **66**: p. 4470-4474.
18. Savikhin, S., H. van Amerongen, S.L.S. Kwa, R. van Grondelle, and W.S. Struve, *Low-temperature energy transfer in LHC-II trimers from the Chl a/b light-harvesting antenna of photosystem II*. Biophys. J., 1994. **66**: p. 1597-1603.

17. Savikhin, S., Y. Zhou, S. Lin, R.E. Blankenship, and W.S. Struve, *Femtosecond spectroscopy of Chlorosome antennas the green photosynthetic bacterium Chloroflexus aurantiacus*. J. Phys. Chem., 1994. **98**: p. 10322-10334.
16. Savikhin, S., W. Zhou, R.E. Blankenship, and W.S. Struve, *Femtosecond energy transfer and spectral equilibration in bacteriochlorophyll a-protein antenna trimers from the green bacterium Chlorobium tepidum*. Biophys. J., 1994. **66**: p. 110-113.
15. Savikhin, S. and W.S. Struve, *Ultrafast energy transfer in FMO trimers from the green bacterium Chlorobium tepidum*. Biochemistry, 1994. **33**: p. 11200-11208.
14. Savikhin, S., and Struve, W. S., *Femtosecond pump-probe spectroscopy of bacteriochlorophyll a monomers in solution*. Biophys. J., 1994. **67**: p. 2002-2007.
13. Savikhin, S., N. Tao, P.-S. Song, and W.S. Struve, *Ultrafast pump-probe spectroscopy of the photoreceptor stentorins from the ciliate Stentor coeruleus*. J. Phys. Chem., 1993. **97**: p. 12379-12386.
12. Savikhin, S. and A. Freiberg, *Origin of "universal" ultraviolet luminescence from the surfaces of solids at low temperatures*. J. Lumin., 1993. **55**: p. 1-3.
11. Savikhin, S., T. Wells, P.-S. Song, and W.S. Struve, *Ultrafast pump-probe spectroscopy of native etiolated phytochrome*. Biochemistry, 1993. **32**: p. 7512-7518.
10. Travnikov, V.V., A. Freiberg, and S. Savikhin, *Surface excitons in ZnO crystals*. J. Lumin., 1990. **47**: p. 107-112.
9. Savikhin, S., A. Freiberg, and V.V. Travnikov, *Picosecond emission kinetics of surface excitons in ZnO*. JETP Lett., 1989. **50**: p. 1989-1992.
8. Aaviksoo, J., A. Lippmaa, A. Freiberg, and S. Savikhin, *Picosecond emission kinetics of excitons in CdS*. Sov. Phys. Solid State, 1989. **31**: p. 462-467.
7. Savikhin, S., H. Sonajalg, and A. Freiberg, *Spectral-kinetic investigation of high- temperature superconductive Y-Ba-Cu-O ceramics under ultraviolet laser excitation*. Proc. Acad. Sci. ESSR, 1988. **37**: p. 244-246.
6. Savikhin, F., S. Savikhin, and I. Bitov, *Television analyzer of a single (sub)nanosecond pulse and the operational software*. Proceedings of the Institute of Physics AN ESSR, 1986. **58**: p. 195-202.
5. Aaviksoo, J., S. Savikhin, G.F. Stelmakh, A. Freiberg, and M.P. Tsvirko, *Picosecond kinetic measurements of the metalloporphyrin fluorescence*. J. Appl. Spectrosc., 1986. **44**: p. 160-163.
4. Aaviksoo, J., A. Freiberg, T. Reinot, and S. Savikhin, *Picosecond spectroscopy of polaritons in anthracene crystals. I. Preresonant scattering*. J. Lumin., 1986. **35**: p. 267-275.
3. Savikhin, S. and A. Freiberg, *Resonant secondary emission and vibrational relaxation of F-centers from picosecond spectrochronography data*. Bull. Acad. Sci. USSR, Phys. Ser., 1985. **49**: p. 169-173.
2. Freiberg, A., S. Savikhin, and A. Anijalg, *Hot luminescence and ultrafast configurational relaxation of F centers*. Opt. Commun., 1984. **49**: p. 34-38.

1. Aaviksoo, J., A. Freiberg, S. Savikhin, G.F. Stelmakh, and M.P. Tsvirko, *Picosecond fluorescence study of the lifetimes of metalloporphyrin S_1 and S_2 states*. Chem. Phys. Lett., 1984. 111: p. 275-278.

INVITED TALKS AND SEMINARS (Last 5 years)

How to catch sunlight: lessons from photosynthesis. Ball State University, September 2007

Novel photoprotection mechanisms in photosynthetic pigment-protein complexes. Penn State University, November 12, 2007

How to catch sunlight: lessons from photosynthesis. Washington University at St. Louis, September 9, 2007

National Institutes of Health, scheduled for fall 2007.

Novel photoprotection mechanisms in photosynthetic pigment-protein complexes. University of Alabama, September 27, 2007.

Physical principles utilized by nature in photosynthesis and their application in biomimetic devices
Purdue University (Physics Department), September 20, 2007

Session Chair: "L35. Metalloproteins: Theory and experiment", American Physical Society Meeting, March 5-9, 2007

Chlorophylls in photosynthetic complexes: structure, function, survival. Indiana University, January 24, 2007

Chlorophylls in photosynthetic complexes: structure, function, survival. Purdue University, October, 2006

Session chair: 32nd *Midwest/Southeast Photosynthesis Meeting*, Turkey Run, IN October 28-30, 2006

Organizer of the 31st *Midwest/Southeast Photosynthesis Meeting*, Turkey Run, IN October 28-30, 2005

Photosystem I: following the path of energy and electron transfer. University of Maryland, October 2005

Directionality of electron transfer in PS I. International workshop on PS I, Berlin, May 2003

Photosystem I: following the path of energy and electron transfer, Montana University, April 2003

Photosystem I: following the path of energy and electron transfer, Indiana University and Purdue University in Indianapolis, October 2002

Photosystem I: following the path of energy and electron transfer. Center for Photosynthesis, Arizona State University, April 2002

Kinetics of charge separation and $A_0 \rightarrow A_1$ electron transfer in intact photosystem I reaction centers. International Conference on Tetrapyrrole Photoreceptors in Photosynthetic Organisms. Brown University, Providence, Rhode Island, USA, July 25-30, 2001

CONFERENCE PROCEEDINGS/ABSTRACTS (refereed, since 2002)

7. Kim HY, Dashdorj N, Zhang HM, Yan JS, Cramer WA, Savikhin S. The Chl a molecule in the cytochrome b6f complex of oxygenic photosynthesis: a unique protection mechanism against singlet oxygen formation. *Biophys. J.* 2005, 88:175A-176A
6. Dashdorj N, Zhang HM, Kim HY, Yan JS, Cramer WA, Savikhin S. Quenching the singlet excited state of the monomeric chlorophyll a in the cytochrome b6f complex as a unique photoprotection mechanism. *Biophys. J.* 2005, 88:510A
5. Xu W, Martinsson P, Dashdorj N, Chitnis P, Savikhin S. Local dielectric constant around the electron primary acceptor in photosystem I: a probe for protein matrix relaxation. *Biophys. J.* 2003, 84:149A
4. Savikhin, S.; Martinsson, P.; Chitnis, P. R.; Johnson, W.; Xu, W.; Struve, W. S., The kinetics of primary electron transfer steps in PS I reaction center. In *Ultrafast phenomena XII*, Elsaesser, T.; Mukamel, S.; Murnane, M. M.; Scherer, N. F., Eds. Springer: Berlin, 2000; pp 662-664.
3. Struve WS, Savikhin S, Chitnis PR, Xu W. Electronic excitation transport and trapping in wild-pipe and mutant photosystem 1 from *synechocystis* SPPCC 6803. Abstracts of papers of the American Chemical Society 218: U285-U285, 1999
2. Savikhin S, Xu W, Chitnis P, Struve WS. Primary processes in photosystem I: Mutageneses, ultrafast kinetics, and reality-based simulations. *Photochemistry and Photobiology* 1999, 69:13S
1. Savikhin S, Struve WS. Electronic energy transfer in light-harvesting antennas of green photosynthetic bacteria. Abstracts of papers of the American Chemical Society 1996, 212:36

PROFESSIONAL MEETINGS (Since 2002)

S. Savikhin, H. Kim, H. Li, J. Maresca, D. Bryant, Novel photo-protection mechanism in strongly coupled chlorophyll complexes: triplet excitons in chlorosomes and in artificial chlorophyll aggregates. XIVth International Congress on Photosynthesis, Glasgow, UK, July 22-27, 2007. This was one of only 4 submissions selected for oral presentation in this session; the remaining 66 were given as posters.

N. Dashdorj, E. Yamashita, J. Schaibley, W. A. Cramer, and S. Savikhin. Ultrafast Optical Studies of the Cytochrome *b₆f* Complex in Solution and Crystalline States. XIVth International Congress on Photosynthesis, Glasgow, UK, July 22-27, 2007

S. Savikhin, H. Kim, H. Li, J. Maresca, D. Bryant. Novel photo-protection mechanism in strongly coupled chlorophyll complexes: triplet excitons in chlorosomes and in artificial chlorophyll aggregates. Light Harvesting Systems Workshop, Drymen, UK, July 19-21, 2007

Hanyoup Kim, Hui Li, Julia A. Maresca, Donald A. Bryant, and Sergei Savikhin (2007). Novel photoprotection mechanism in strongly coupled chlorophyll complexes: triplet excitons in chlorosomes and in artificial chlorophyll aggregates. American Physical Society Meeting, Baltimore, March, 2007.

Hanyoup Kim, Hui Li, Julia A. Maresca, Donald A. Bryant, and **Sergei Savikhin** (2007). Novel photoprotection mechanism in strongly coupled chlorophyll complexes: triplet excitons in chlorosomes and in artificial chlorophyll aggregates. American Biophysical Society Meeting, Denver, March, 2007.

H. Kim, N. Dashdorj, H. Zhang, J. Yan, W. A. Cramer, **and S. Savikhin** (2006). Divergence of protein structure in solvent from that in x-ray quality crystals: probing the local environment of the Chl *a* in the cytochrome *b₆f* complexes by ultrafast spectroscopy. Midwest/Southeast Photosynthesis Meeting, Turkey Run, IN October 28-30.

Hanyoup Kim, Hui Li, Julia A. Maresca, Donald A. Bryant **and Sergei Savikhin** (2006). Novel photoprotection mechanisms in chlorosomes from green sulfur bacterium *Chlorobium Tepidum*. Midwest/Southeast Photosynthesis Meeting, Turkey Run, IN October 28-30.

N. Dashdorj, Yamashita G., Cramer WA and Savikhin S (2006). Assessing the crystal packing on the protein structure: Comparative ultrafast optical studies of oligomeric protein complex in solution and in single crystals. Gordon Research Conference on Photosynthesis, July 2-7, Bryant University, Smithfield, RI.

H. Kim, M. D. Kane, S. Kim, W. Dominguez, B. M. Applegate, **and S. Savikhin** (2006). Development of False Signal Suppressing Biosensor Utilizing Color Changing Molecular Beacon on Microarray Platform for Rapid Detection of *Escherichia Coli* O157:H7. The *Nineth World Congress on Biosensors*, May 10-12, Toronto, ON, Canada

N. Dashdorj, H. Zhang, J. Yan, E. Yamashita, J. Schaibley, W. A. Cramer, **and S. Savikhin** (2006). Divergence of protein structure in solvent from that in X-ray quality crystals: probing the local environment of Chl *a* in the cytochrome *b₆f* complexes by ultrafast spectroscopy. *American Physical Society Meeting*, March 13-17, Baltimore, MD.

H. Kim, N. Dashdorj, H. Zhang, J. Yan, W. A. Cramer, **and S. Savikhin** (2006). Novel protection mechanisms against singlet oxygen formation by the Chl *a* molecule in the cytochrome *b₆f* complex of oxygenic photosynthesis. *American Physical Society Meeting*, March 13-17, Baltimore, MD.

H. Kim, H. Li, D. A. Bryant, **and S. Savikhin** (2006). Novel photoprotection mechanisms in chlorosomes from green sulfur bacterium *Chlorobium tepidum*. *American Physical Society Meeting*, March 13-17, Baltimore, MD.

H. Kim, H. Li, J. A. Maresca, D. A. Bryant, **and S. Savikhin** (2006) Novel Photo-protection mechanisms in chlorosomes from the green sulfur bacterium *Chlorobium Tepidum*. *50th Meeting of American Biophysical Society*. February 18-22, Salt Lake City, Utah. 775-Plat.

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