

**Список основных работ
Аллахвердиева Сулеймана Ифхан оглы**

**List of major publications
Suleyman I. Allakhverdiev**

(1978-2020)

I. Статьи в реферируемых журналах (Articles in refereed journals (304))

1. Климов В.В., Аллахвердиев С.И., Пашенко В.З. (1978) Измерение энергии активации и времени жизни флуоресценции хлорофилла фотосистеме 2. Докл. АН СССР, 242: 1204-1205.
2. Климов В.В., Аллахвердиев С.И., Деметер Ш., Красновский А.А. (1979) Фотовосстановление феофитина в фотосистеме 2 хлоропластов в зависимости от окислительно-восстановительного потенциала среды. Докл. АН СССР, 49: 227-230.
3. Климов В.В., Аллахвердиев С.И., Красновский А.А. (1979) Сигнал ЭПР при фотовосстановление феофитина в реакционных центрах фотосистемы 2 хлоропластов. - Докл. АН СССР, 249: 485-488.
4. Климов В.В., Аллахвердиев С.И., Шутилова Н.И., Красновский А.А. (1980) Исследование фотовосстановления феофитина и фотоокисления хлорофилла P680 на препаратах фотосистемы 2 из хлоропластов гороха и *Chlamydomonas reinhardtii*. Физиология растений, 27: 315-326.
5. Klimov V.V., Allakhverdiev S.I., Shuvalov V.A., Krasnovsky A.A. (1982) Effect of extraction and re-addition of manganese on light reactions of photosystem II preparations. - FEBS Lett., 148: 307-312.
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7. Куликов А.В., Богатыренко В.Р., Лихтенштейн Г.И., Аллахвердиев С.И., Климов В.В., Шувалов В.А., Красновский А.А. (1983) Магнитное взаимодействие марганца с анион-радикалом феофитина и катион - радикалом хлорофилла в реакционных центрах фотосистемы 2. Биофизика, 28:357-363.
8. Klimov V.V., Allakhverdiev S.I., Shafiev M.A., Demeter S. (1985) Effect of complete extraction and re-addition of manganese on the fluorescence of pea photosystem II preparations. Biochim Biophys Acta, 809: 414-420.
9. Аллахвердиев С.И., Шафиев М.А., Климов В.В. (1985) Влияние экстрагирования и последующего добавления ионов марганца на фотоокисление хлорофилла P680 в препаратах фотосистемы 2. Биофизика, 31: 223-226.
10. Бойченко В.А., Аллахвердиев С.И., Ладыгин В.Г., Климов В.В. (1986) Функциональное сопряжение гидрогеназы с фотосистемой 2 в целых клетках мутантов *Chlamydomonas reinhardtii*. Докл. АН СССР, 290: 995-998.
11. Klimov V.V., Allakhverdiev S.I. and Ladygin V.G. (1986) Photoreduction of pheophytin in photosystem II of the whole cells of green algae and cyanobacteria. Photosynth. Res., 10: 355-361.

12. **Allakhverdiev S.I.**, Shafiev M.A. and Klimov V.V. (1986) Effect of reversible extraction of manganese on photooxidation of chlorophyll P₆₈₀ in photosystem II preparations. *Photobiochem. Photobiophys.*, 12: 61-65.
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14. **Allakhverdiev S.I.**, Setlikova E., Klimov V.V. and Setlik I. (1987) In photoinhibited photosystem II particles pheophytin photoreduction remains unimpaired. *FEBS Lett.*, 226: 186-190.
15. Klimov V.V., **Allakhverdiev S.I.** and Ladygin V.G. (1987) "Photoreduction of pheophytin in photosystem II reaction centers under anaerobic conditions" - *Proc. Indian Natl. Sci. Acad.*, B53:385-389.
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21. Куликов А.В., Юданова Е.И., Лихтенштейн Г.И., **Аллахвердиев С.И.**, Климов В.В. (1988) Изучение процесса выделения кислорода в хлоропластах гороха методом спиновых меток. *Биофизика*, 33: 984-989.
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24. Климов В.В., Шафиев М.А., **Аллахвердиев С.И.** (1989) Фотоинактивация фотосистемы 2 в субхлоропластных частицах после полного удаления марганца. *Физиология растений*, 36: 1073-1079.
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34. **Аллахвердиев С.И.**, Козлов Ю.Н., Ель-Шейх М.М., Деметер Ш., Климов В.В. (1992) Влияние химической модификации тирозина и гистидина в изолированном реакционном центре фотосистемы 2 на термолюминесценцию ТЛ₅₅. *Биологические мембраны*, 9: 904-914.
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IV. Материалы конференций, изданные в книгах- Conference proceedings published in books(14).

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2. Klimov V.V., Ananyev G.M., **Allakhverdiev S.I.**, Zharmukhamedov S.K., Mulay M., Hegde U., Padhye S. (1990) Photoreactivation and photoinactivation of photosystem II after a complete removal of manganese from pea subchloroplast particles. *In: Current Research on Photosynthesis* (Ed: Baltscheffsky M.) Kluwer Acad Publishers, v.1, pp.247-254.
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4. Yerande R., Hegde U., Padhye S., Klimov V.V., Ananyev G.M., **Allakhverdiev S.I.**, Zharmukhamedov S.K. (1990) Artificial photosynthesis: Monomeric quinone complexes of iron (+2) and manganese (+2), (+3) and (+4) in photoreactivation of pea subchloroplast particles" - *In: Proc. of Workshop on Recent Advances in Bioenergetic Processes.* JNU, New-Delhi, India, pp.12-15
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6. Padhye S., Yerande R., Kumbahar A., Hegde U., Klimov V.V., Ananyev G.M., **Allakhverdiev S.I.**, Zharmukhamedov S.K. (1991) Functional models of water oxidation complex in photosystem II. *In: Indo-US Global Climatic Changes. Photosynthesis and Plant Productivity.* New-Delhi, India, pp.132-136

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9. Klimov V.V., BaranovS.V., **Allakhverdiev S.I.** (1998) Protective role of bicarbonate on the donor side of photosystemII during photoinhibition and thermoinactivation. ***In:Photosynthesis: Mechanisms and Effects***(Ed: Garab G.), Kluwer Acad Publishers, Dordrecht,v.II, pp.1209-1214
10. **Allakhverdiev S.I.**, Nishiyama Y., Suzuki I., Tasaka Y., Murata N. (1998)Fatty acids unsaturation of membrane lipids is involved in the tolerance to salt stress. ***In:Photosynthesis: Mechanisms and Effects***(Ed: Garab G.), Kluwer Academic Publishers, Dordrecht, v.III, p.1815-1818
11. **Allakhverdiev S.I.**,Miyairi S., Nishiyama Y., Murata N. (2001) Synergistic action of light and salt stress to impair photosystem II by inhibition of the expression of *psbA* genes. ***In: PS2001 Proceedings, 12thInternational Congress on Photosynthesis***, CSIRO, Australia, 4P, S8-020
12. Nishiyama Y., Yamamoto H., **Allakhverdiev S.I.**, Inaba M., Yokota A., Murata N. (2001) Inhibition by oxidative stress of the repair of photodamage to photosystem II. ***In: PS2001 Proceedings, 12thInternational Congress on Photosynthesis***, CSIRO, Australia, 4P, S8-009
13. Miyairi S., **Allakhverdiev S.I.**, Nishiyama Y., Murata N. (2005) Repair of photodamaged Photosystem II is inhibited by NaCl at transcription and translation of *PsbA* genes in *Synechocystis*" ***In: Photosynthesis: Fundamental Aspects to Global Perspectives, Proceedings of the 13thInternational Congress of Photosynthesis***.(Eds: van der Est A., Bruce D.), Montreal-2004, Allen Press, v. 3, pp.487-489
14. Nishiyama Y., Kojima K., Hayashi H., **Allakhverdiev S.I.**, Murata N. (2007) "Action of reactive oxygen species in the photoinhibition of photosystem II. ***In:Proceedings of the 14thInternational Congress of Photosynthesis***,Glasgow, pp. 326-329.

V. Устные и/или приглашенные докладов с 1995г – Oral and / or invited lectures from1995 (56)

1. **Satellite Meeting of International Congress on Photosynthesis: Visible and UV Light Stress, Paris, France, August, 1995**, "Evidence forthe involvement of cyclic electron transport inthe protectionof photosystem II against photoinactivation:influenceofanew phenolic compound".
2. **European Research Conferences: "Biophysics of Photosynthesis"**Sitges, Spain, 5-10 October, 1996, "Bicarbonate requirement for the donor side of photosystemII"
3. **European Workshop: "Molecular recognition in photosynthesis"** Jaca, Spain, 27-29 September, 1996, "Bicarbonate is an essential constituent of the water-oxidizing complex of photosystem II"
4. **The 13th International symposium on Plant Lipids, Seville, Spain, July, 1998**; "Effect of unsaturation of fatty acids in membrane lipids on the tolerance to light and high-salt stress and temperature-dependent regulation of the expression of genes for fatty acid desaturases in *Synechocystis*"

5. *Japan-Australia Binational Seminar "Molecular physiology of photosynthesis in Stress Environments"* Okazaki, Japan, March, 1998; "Bicarbonate may be required for ligation of manganese in the oxygen-evolving complex of photosystem II"
6. *Satellite Meeting of the 11th International congress on Photosynthesis: "International Workshop on Stress Synergisms in Plants: Abiotic and Biotic Stress in Photosynthesis"* Tata, Hungary, August, 1998; "Genetic engineering of the unsaturation of fatty acids in membrane lipids alters the tolerance of *Synechocystis* to salt stress"
7. *The 38th NIBB Conference: "Stress Responses, Sensing, Signal Transduction and Gene Expression"* Okazaki, Japan, March 29-31, 1998; "Low-temperature perception system which regulates induction of fatty acid desaturases in the cyanobacterium *synechocystis* sp. PCC 6803"
8. *The M BIO Conference "Marino Biotechnology"*, Kamaishi, Japan August, 1999 "Structure and function of photosystem II"
9. *The 14th International Workshop of Plant Lipids*, Okazaki, Japan, November-December, 2001; "Unsaturated fatty acids in membrane lipids protect the photosynthetic machinery against salt-induced damage in cyanobacteria"
10. *"Light Stress and Photosynthesis"*, Satellite Meeting of 12th International Congress on Photosynthesis, Heron Island, Australia, August 2001; "The repair of photosystem II is the site of regulation by environmental stresses"
11. *The 12th International Congress on Photosynthesis*, Brisbane, Australia, August 2001; "Light and salt stress act synergistically to impair photosystem II by inhibition of the transcription and translation of *psbA* genes"
12. *The International Symposium on Photosystem II*, Pushchino, Russia, July 8-12, 2002 "Salt stress inhibits the repair of photodamaged photosystem II by suppressing the transcription and translation of *psbA* genes in *Synechocystis*"
13. *The International Satellite Meeting "Photosynthesis and Post-Genomic Era: From Biophysics to Molecular Biology a Path in the Research of Photosystem II"*- in honour of Professor Norio Murata, August 25-28, 2004 Trois-Rivières, Québec, Canada, in Conjunction with the XIIIth International Congress on Photosynthesis, Montreal, Canada "Environmental stress inhibits the synthesis *de novo* of proteins involved in the photodamage-repair cycle of photosystem II in *Synechocystis*"
14. *The 18th Pushchino Conference on Photosynthesis*, Pushchino, Russia, June 19-23, 2005 "Cellular energization protects the photosynthetic machinery against salt-induced inactivation in *Synechococcus*"
15. *NIBB Conference in 2006*. "Temperature Regulation of Photodamage to Photosystem II in *Synechocystis*"
16. *The International Meeting "Photosynthesis and Post-Genomic Era: Structure and Function of Photosystems"*-in honour of Prof. Jim Barber, August 20-26, 2006, Pushchino, Russia "A new Paradigm for Photodamage and Repair in Photoinhibition of Photosystem II"
17. *Kanasawa University, Kanasawa, Japan, February 14, 2007* "Temperature regulation of photodamage to photosystem II in *Synechocystis*"
18. *Institute for Molecular Science (IMS), National Institutes for Natural Science (NINS), Myodaiji, Okazaki, Japan, June 20, 2007*, "Photosystem II: X-ray analysis and Temperature regulation of photodamage to photosystem II in *Synechocystis*"

19. *The 14th International Congress on Photosynthesis, Glasgow, July, 2007*; "Action of reactive oxygen species in the photoinhibition of photosystem II"- Y.Nishiyama,K.Kojima, H.Hayashi,**S.I.Allakhverdiev**,N. Murata
20. *International Conference "Photosynthesis in the Global Perspective" DAVV, Indore, India (27-29 November) 2008*"Single-molecular quinine pools: an approach toward photosynthetic energy conversion from organic chemistry"- T. Nagata, Y. Kikuzawa, T. Nagasawa and **S.I.Allakhverdiev**
21. **RIKEN Plant Science Center, Yokohama, Japan. February 4, Monday, 2008 (at 14:30). (Host researcher:Prof. K. Shinozaki. Director of RIKEN Plant Science Center)**"Glycinebetaine alleviates the inhibitory effect of moderate heat stress on the repair of photosystem II during photoinhibition"
22. **Okayama University, Okayama, Japan, February 18, Monday, 2008 (at 15:00). (Host researcher: Prof. J.-R. Shen. Department of Biology).**"From natural photosynthesis to artificial photosynthesis: Reconstitution of water-oxidizing complex in Mn-depleted photosystem II preparations using synthetic binuclear Mn(II) and Mn(IV) complexes: production of hydrogen peroxide"
23. **Osaka Prefecture University, Osaka, Japan, February 20, Wednesday, 2008 (at 15:00). (Host researcher: Prof. M. Sigiura. Department of Plant Biosciences),** "Structure and Function of Photosystem II"
24. **The University of Tokyo, Tokyo, Japan.March 3, Monday, 2008 (at 16:00). (Host researcher: Prof. H. Nishihara. Department of Chemistry),** "Structure and Function of Photosystem II: Reconstitution of water-oxidizing complex in Mn-depleted photosystem II preparations using synthetic binuclear Mn complexes"
25. **Nagoya Institute of Technology, Nagoya, Japan. March 12, Monday, 2008 (at 15:40). (Host researcher:Prof. Y. Funahashi. Department of Applied Chemistry)**"Structure and Function of Photosystem II: Reconstitution of water-oxidizing complex in Mn-depleted photosystem II preparations using synthetic binuclear Mn complexes" at Public Symposium "Carbon Cycle and Light Energy"
26. **Tokyo Institute of Technology, Chemical Resources Laboratory, Yokohama, Japan. January 28, Thursday, 2010, (at 16:00). (Host researcher: Prof. M. Fujii):** "Structure and Function of Photosystem II: Reconstitution of the Water-Oxidizing Complex in Mn-depleted Photosystem II Preparations using Synthetic Mn complexes"
27. **The Tokyo University of Sciences, Department of Applied Biological Science, Noda, Japan. January 29, Friday, 2010, (at 16:00). (Host researcher: Prof. Y. Inoue):** "Structure and Function of Photosystem II: Reconstitution of the Water-Oxidizing Complex in Mn-depleted Photosystem II Preparations using Synthetic Mn complexes".
28. **National Institute of Advanced Industrial Science and Technology (AIST) Tsukuba, Japan. February 4, Thursday, 2010, at 14:00), (Host researcher: Prof. T. Hiraga):** "Structure and Function of Photosystem II: Reconstitution of the Water-Oxidizing Complex in Mn-depleted Photosystem II Preparations using Synthetic Mn complexes".
29. **Institute for Molecular Science, Research Center for Molecular Scale Nanoscience, Okazaki, Japan.February 16, (Tuesday, 2010 (at 16:00), (Host researcher: Prof. T. Nagata):** "Structure and Function of Photosystem II: Reconstitution of the Water-Oxidizing Complex in Mn-depleted Photosystem II Preparations using Synthetic Mn complexes".
30. **Nagoya University, Department of Electrical Engineering, Electronics and Information Electronics, Nagoya, Japan. February 17, (Wednesday, 2010 (at 12:30). (Host researcher:**

Prof. K. Nakazato): “Structure and Function of Photosystem II: Reconstitution of the Water-Oxidizing Complex in Mn-depleted Photosystem II Preparations using Synthetic Mn complexes”.

31. **The University of Tokyo, Department of Chemistry, Tokyo, Japan. March 1, Monday, 2010 (at 16:00). (Host researcher: Prof. H. Nishihara):** “Structure and Function of Photosystem II: Reconstitution of the Water-Oxidizing Complex in Mn-depleted Photosystem II Preparations using Synthetic Mn complexes”.
32. **International Conference “Photosynthesis Research for Sustainability”, Baku, Azerbaijan, (July 24-30, 2011)-“Opening ceremony” and lecture “From natural to artificial photosynthesis”** July 24, at 15:30.
33. **Korean Society of Plant Biology (KSPB) and Global Plant Council (GPC) workshop,** Jeju island, South Korea, October 28, Saturday, (at 10 a.m.), 2012. **Title: “Initiative for Plant Research on Energy and Biomaterials: Solar Energy Conversion using photosynthetic Systems”**
34. **Pusan National University, Department of Plant Molecular Biology, Pusan, South Korea, October 12, Friday (at 5 p.m.), 2012. (Host researcher: Prof. Choon-Hwan Lee, President of KSPB, Head of Department of Plant Molecular Biology). Title: “Solar Energy Conversion using Photosynthetic Systems”**
35. **Daegu Gyeongbuk Institute of Science and Technology, Dalseong-Gun, Daegu, South Korea, September 20, Thursday (at 3 p.m.), 2012. (Host researcher: Prof. Hong GilNam, Head, School of New Biology). Title: “From Natural to Artificial Photosynthesis: Structure and Function of Photosystem II, Reconstitution of the Water-Oxidizing Complex in Mn-depleted Photosystem II Preparations using Synthetic Mn complexes”.**
36. **International Conference “Photosynthesis Research for Sustainability: in honor of J.A. Aliyev”, Baku, Azerbaijan, (June 5-9, 2013)-“Proposed mechanism for water oxidation: From natural Mn-Ca cluster to nano-sized Mn oxides”** July 24, at 17:50.
37. **Okayama University, Okayama , Japan. “Comparison of nano-sized Mn-Ca oxides with Mn-Ca cluster of photosystem II in water oxidation”**
38. **Photosynthesis Research Center, Okayama University, Japan: “Nano-Sized Manganese-Calcium Cluster in Photosystem II: From Natural to Artificial”, September 6, 2014**
39. **International Conference “Photosynthesis Research for Sustainability in honor of Vladimir Shuvalov” June 1-8, 2014, Pushchino, Moscow Region, Russia: “Diversity of chlorophylls in photosynthesis”, June 3th, Lecture (11:00-11:30)**
40. **Opening ceremony at International Conference “Photosynthesis Research for Sustainability in honor of Vladimir Shuvalov”, June 1-8, 2014, Pushchino, Moscow Region, Russia**
41. **“Excitation energy transfer in thylakoid membranes from the chlorophyll f-containing cyanobacterium”** Meeting of the Japanese Society of Plant Physiologists (16-18 March, 2015). Tokyo, Japan.
42. **“Nanostructured manganese oxide on silica aerogel toward water oxidation” International Conference Photosynthesis Research for Sustainability in honor of Dr. George C. Papageorgiou. (21-26 September 2015) Crete, Greece.**
43. **“Characterization of unique photosystem I complexes and its application” International Conference Photosynthesis Research for Sustainability in honor of Dr. George C. Papageorgiou. (21-26 September 2015) Crete, Greece.**

44. **“Physiological significance of photosystem I photoinhibition in wheat leaves”** International Conference Photosynthesis Research for Sustainability in honor of Dr. George C. Papageorgiou. (21-26 September 2015) Crete, Greece.
45. **“Which technique is better for studying photosynthetic apparatus? Modulated, prompt or delayed chlorophyll fluorescence?”** International Conference Photosynthesis Research for Sustainability in honor of Dr. George C. Papageorgiou. (21-26 September 2015) Crete, Greece.
46. **“Хлорофиллы d и f и их роль в первичных процессах фотосинтеза цианобактерий”**. Симпозиальный доклад: (7 Октября, 16:20), V Съезде биохимиков России, 4–8 октября 2016, Сочи - Дагомыс, Россия.
47. **“A set-up for studying effects of environmental factors on a photocurrent generated by a solar cell based on titanium dioxide and plant photosensitizers”**. Invited Lecture (November 1 at 10:00) International Conference “Photosynthesis and Hydrogen Energy Research for Sustainability-2017” in honor of Agepati S. Raghavendra, William A. Cramer, and Govindjee” October 30 – November 4, 2017 Hyderabad, India
48. **“Альтернативная энергетика с точки зрения физиолога растений”**- 79-го Тимирязевского чтения (ИФР РАН, 5 Июня, 2018 г.).
49. I gave series of lectures on a new direction of research in the field of nanobiotechnology, in particular the system of artificial photosynthesis using protein structures to produce molecular hydrogen as an alternative source of energy and the use of photosynthetic crops for biofuel production at the Department of Biology and Biotechnology, Al-Farabi KazNU (from 16.11.2018 to 06.12.2018), Almaty, Kazakhstan (<https://www.kaznu.kz/en/3/news/one/14713/>)
50. **“Alternativeenergybasedonphotosynthesis”**. Invited lecture (23 November2018), International scientific seminar "Bioenergetics on the basis of phototrophic microorganisms". At the faculty of biology and biotechnology, Al-Farabi Kazakh National University, Almaty, Kazakhstan (<https://www.kaznu.kz/en/3/news/one/14982/>)
51. **“Альтернативная энергетика на основе фотосинтеза”**. Приглашенный доклад на междисциплинарном мероприятии "Биофизика-Фотоника" из серии "Технологии нового хозяйственного уклада". Мероприятие состоялось в "Точке кипения" (форумная площадка Агентства стратегических инициатив), 14 декабря 2018 г. (15:00). Малый Конюшковский переулок, д.2 (возле "высотки" на Кудринской площади, м.Баррикадная, м.Краснопресненская). Отв: Шарипов О.В., советник администрации РФФИ (E-mail: sharipov@rfbr.ru)
52. **“Alternativeenergybasedonphotosynthesis”**. Invited lecture (4 March 2019), Azerbaijan Diplomatic Academy (ADA) University, Baku, Azerbaijan
53. **“Alternativeenergybasedonphotosynthesis”**. Invited lecture. “The Belt and Road” 1stForum of Plant Membrane Biology (8-10 April, 2019). Foshan, Guangdong, China.
54. **“Искусственный фотосинтез как основа альтернативной энергетики”**-заседания Секции физико-химической биологии ОБН РАН (17 сентября 2019) ИБХ РАН, Москву

55. “Искусственный фотосинтез как основа альтернативной энергетики” Приглашенный пленарный доклад, (19 сентября) IX СЪЕЗД ОБЩЕСТВА ФИЗИОЛОГОВ РАСТЕНИЙ РОССИИ (18-24 сентября 2019), Казань.
56. “Искусственный фотосинтез как основа альтернативной энергетики” Приглашенный доклад на семинаре "Курчатовский институт" 23.09.2019 (понедельник) в 15.00 в НИЦ "Курчатовский институт" (площадь Академика Курчатова, 1).
57. “The four Basic types of Biofuels: Problems and future Prospects” Invited Lecture. International Conference “Aspects and innovations of environmental biotechnology and bioenergy”, (February 12 - 13, 2021), Al-Farabi Kazakh National University, Almaty, Kazakhstan.

VI. Авторское свидетельство - Patents (7)

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