

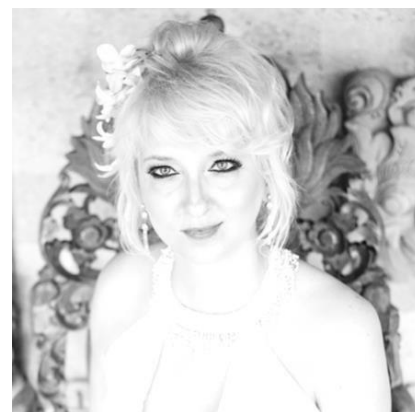
CURRICULUM VITAE

Personal details

Full name: Semyachkina-Glushkovskaya Oxana Valerievna
Date of birth: 26 December 1975

Affiliation

Head of Chair of Human and Animals Physiology, Biology
Department, Saratov State University, 410012, Astrakhanskaya
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Education

1994-1999 Student, Chair of Human and Animals Physiology,
Biology Department, Saratov State University (diploma with excellence)
1999-2002 PhD-student, Chair of Human and Animals Physiology,
Biology Department, Saratov State University (diploma with excellence)
2010-2011 Postdoctoral, Chair of Human and Animals Physiology

Employment

2002 – 2007 Assistant Prof., Chair of Human and Animals Physiology, Biology
Department, Saratov State University
2007 – 2012 Associate Prof. Chair of Human and Animals Physiology, Biology
Department, Saratov State University
2012-2013 Professor, Chair of Human and Animals Physiology, Biology Department,
Saratov State University
2013 now Head of Chair of Physiology of Human and Animals in Biological
Department of Saratov State University
Deputy Director of the Scientific Medical Center for the Commercialization
of Scientific Research in Saratov State University
Professor of laboratory of Cardiovascular Physics in Humboldt University,
and Marburg Medical University

Specialization

03.03.01 – physiology

Research interests

The cerebral lymphatic system; neuroimmunology, brain drug delivery, neurophotonics.

Education activity

Lectures of basic courses:

1. Physiology of Human and Animals
2. Physiology of Central Nervous System
3. Cellular and molecular physiology
4. Biophysics

Special courses:

1. Physiology and pathophysiology of blood-brain barrier

2. Innovative ideas in science
3. Commercialization of scientific technologies

Defense of the thesis presented under my supervision:

Sindeeva Olga “Mechanisms of stress-induced disturbance of cerebral hemodynamics and their role in the development of intracranial hemorrhages in newborn rats”

<http://asu.edu.ru/issledovaniya-i-innovacii/7705-dissertaciia-sindeevoi-0a.html>

Kassim Mohanad “Vascular effects of androgens and their role in stress and adaptation mechanisms”

<http://asu.edu.ru/issledovaniya-i-innovacii/6624-dissertaciia-kassima-ma.html>

Bragina Olga “Physiological effects of transcranial direct current stimulation on cerebral blood flow and brain metabolism in mice in health and disease»

<https://www.dissercat.com/content/fiziologicheskie-effekty-transkraniialnoi-stimulyatsii-postoyannym-tokom-na-tserebralnyi-krov>

Zinchenko Ekaterina “Effect of hypoxia on stress resistance of cerebral vessels and brain barrier function in newborn rats”

<https://www.dissercat.com/content/vliyanie-gipoksii-na-stress-ustoichivost-tserebralnykh-sosudov-i-barernuyu-funktsiyu-mozga>

Supervision of PhD-students: Khotovodov Alexander, Terskov Andrey.

Expert of the development of system for distance learning, Marburg Medical University (a program "Virtual Physiology") <http://www.virtual-physiology.com/Home/About>

Grants, Honors and Awards

1997-1999	INTAS grant № 96-0305 (R)
1998-1999	Grants from Saratov Center for Advanced Studies HBA80307, HBA80338 (R)
1998-1999	Grant of the Royal Society of London (R)
1999	State Scientific Scholarship Governor of Saratov region for students
2000-2002	Grant of the State Committee of the Russian Federation for Higher Education in the fundamental natural science (№ 95-0-10 00238) (PI)
2002	Fellowship from the President of Russia for PhD-students
2000, 2001	Fellowship from International Soros Foundation
2004-2007	Grant CRDF, Annex № BF MO6, Y2-B- 06- 18 (PI)
2006,2007,2008,2009,2010	Grant of V.Potantin Foundation for young teachers (PI)
2009	Grant of DAAD program "Mikhail Lomonosov-II (PI)
2001,2003,2006,2007,2009,2010	Awards of the European Society of Hypertension
2008,2009,2010	Award of the Turkish public hypertension and atherosclerosis
2011,2014	Awards of the European Society of Gastroenterology

2010	Grant of V.Potinin Foundation "Teacher on-line" (PI)
2012	Grant of DAAD program Forschungsaufenthalte für Hochschullehrer und Wissenschaftler (PI)
2012	Certificate of honor from the Ministry of Industry and Energy of the Saratov region
2012	Certificate of honor from the Presidium of the Saratov Regional Council of the Russian Society of Inventors and Innovators
2012	Federal Target Program "Scientific and scientific-pedagogic personnel of innovative Russia for 2009-2013", contract number NK-1063P, 20102012 (PI)
2009-2013	Federal Target Program "Scientific and scientific-pedagogic personnel of innovative Russia for 2009-2013", contract number NK-441P, 2009-2011 (PI).
2009-2013	Federal Target Program "Scientific and scientific-pedagogic personnel of innovative Russia for 2009-2013", contract number NK-1257P, 20092011 (R).
2012-2013	Federal Target Program "Scientific and scientific-pedagogic personnel of innovative Russia for 2009-2013", contract number. Agreement 14.V37.21.0216, 2012-2013 (PI).
2012-2013	Federal Target Program "Research and development on priority directions of scientific technological complex of Russia for 2007-2013", contract number 11.519.11.2035 (R).
2012-2013	Federal Target Program "Scientific and scientific-pedagogic personnel of innovative Russia for 2009-2013", contract number. Agreement 14.V37.21.0853, 2012-2013 (R).
2011-2013	Russian Foundation of Basic Research № 1102-00560-a (R) “Clinical and experimental substantiation of a non-invasive rapid diagnostic technology for the development of acute bleeding gastroduodenal ulcers”
2014-2015	Grant of the President of the Russian Federation for young doctors of science MD2216.2014.4, 2014-2015 (PI) “Vascular effects of androgens: systemic and molecular mechanisms, their dependence on the physiological state of the organism, features of manifestation in the male and female body”
2014-2016	Russian Foundation of Basic Research № 14-0200526-a (R) “Development of sensitive methods for diagnosing the risk of developing intracranial hemorrhages in the first days after birth” (R)
2014-2016	Grant from Russian Science Foundation № 14-15-0028 (PI) "Gates" of the blood-brain barrier: the mechanisms of regulation, their dependence on the state of the organism and age, methods of correction with the help of supramolecular transport systems "

2014-2016	Grant from Ministry of Science and Research (№ 17.488.2014/K) (PI) “Mechanisms of development of gastric cancer as a chronic wound process: the transformation of ulcerative lesions into oncology, provoking factors, optical and nanotechnology diagnostics and therapy”
2016-2019	Grant from Russian Science Foundation №16-15-10252 (R) “Development of technology for monitoring the permeability of vascular barriers on the basis of multi-scale analysis of transient processes according to optical imaging methods”
2017-2019	Grant from Ministry of Science and Research №17.1223.2017/ПЧ (PI) “Development of technologies for optical "opening" of the blood-brain barrier and personalized treatment of aggressive forms of glial tumors”
2017-2019	Grant from Russian Science Foundation № 14-15-0028 (PI) “Achilles heel of the blood-brain barrier ": the conducting role of the lymphatic system in the management of brain barrier function, new informative platforms for pharmacological correction of the permeability of cerebral vessels”
2017-2018	Russian Foundation of Basic Research, Bulgaria-Russia program № 17-54-18063 (PI) “Development of new optical technologies to improve the quality of early diagnosis of gastric cancer”.
2017-2019	Russian Foundation of Basic Research, Bulgaria-Russia program № 17-75-20069 (PI) “The development of pioneering technologies in the lifetime imaging of the lymphatic system of the brain and the understanding of its role in the progression of glioblastoma”
2018-2020	Grant from Russian Science Foundation № 18-15-00172 (R) “Laser stimulation and control of the drainage function of the brain for the prevention and treatment of intracranial hemorrhages during the first days after birth”
2018-2020	Grant from Russian Science Foundation № 18-15-00139 (R) “Optical technologies for early diagnosis of gastric cancer”
2019-2021	Grant from Russian Science Foundation № 19-15-00201 (R) Multi-modal study of transport mechanisms of substances and fluids in the brain parenchyma during sleep-wake cycle as a new approach in drug delivery
2020-2023	Russian Foundation of Basic Research 20-015-00308 (PI) “Pilot studies of the functions of the lymphatic system of the brain and its membranes”

2019-2022	Russian Foundation of Basic Research, Chinese-Russian program № 19-515-55016 (PI) “Photomodulation of cleansing brain tissue from amyloid beta during sleep: new non-invasive disease treatment technologies Alzheimer's”
2019-2023	Governmental grant № 075-15- 2022-1094 (PI) “Discovery of fundamental mechanisms of sleep for breakthrough technologies of neurorehabilitation medicine”
2024-2026	Grant from Russian Science Foundation № 24-45-00010 (PI) “Photo-sleep therapy of traumatic brain injury in humans and mice”
2023-2026	Grant from Russian Science Foundation № 23-75-30001 “Pilot technology for photomodulation of the immune system of the animal and human brain: innovative strategies in the treatment of Alzheimer's disease” (PI)
2018, 2022	Grants with the research center of Samsung: - Study of the variability of glucose metabolism in healthy people when eating food with different energy value and the variability of pulse wave parameters” (Agreement 18/2202-1 of 22.02.2018) PI; - Collection of an impersonal database of images of faces and an impersonal database of images of a person (Contract 28/06/19 of 06/28/19) PI - Scientific and clinical studies of non-invasive measurement of hemoglobin concentration using a modified pulsometry sensor of the pilot group of subjects (Agreement 05/09/2022 of 09/12/2022) PI; - A study on measuring human body temperature in a statistically representative sample of the population using smart watches Samsung Galaxy Watch 4 (Agreement 03/07/2022 of 07/28/2022) PI.

PI – Principle Investigator, R - Researcher

Main publications (2020-2024):

1. Dong-Yu Li, Shao-Jun Liu, Ting-Ting Yu, Zhang Liu, Si-Lin Sun, Denis Bragin, Alexander Shirokov, Nikita Navolokin, Olga Bragina, Zheng-Wu Hu, Jürgen Kurths, Ivan Fedosov, Inna Blokhina, Alexander Dubrovski, Alexander Khorovodov, Andrey Terskov, Maria Tzoy Oxana Semyachkina-Glushkovskaya, Dan Zhu. Photostimulation of brain lymphatics in male newborn and adult rodents for therapy of intraventricular hemorrhage. *Nature Communications*, 2023. 14, 6104. <https://doi.org/10.1038/s41467-023-41710-y>
IF=17.69 (Q1)

2. Shaojun Liu, Dongyu, Tingting Yu, Jingtian Zhu, Oxana Semyachkina-Glushkovskaya, Dan Zhu. Transcranial photobiomodulation improves insulin therapy in diabetic mice: modulation of microglia and the brain drainage system. **Communications Biology**. 2023. 6, 1239 (2023). <https://doi.org/10.1038/s42003-023-05630-3>
IF=6.548 (Q1)
3. Semyachkina-Glushkovskaya O.V., Karavaev A.S., Prokhorov M.D., Runnova A.E., Borovkova E.I., Ishbulatov Yu.M., Hramkov A.N., Kulminskiy D.D., Semenova N.I., Sergeev K.S., Slepnev A.V., Sitnikova E.Yu., Zhuravlev M.O., Fedosov I.V., Shirokov A.A., Blokhina I.A. Dubrovski A.I., Terskov A.V., Khorovodov A.P., Ageev V.B., Elovenko D.A., Evsukova A.S., Adushkina V.V., Telnova V.V., Postnov D.E., Penzel T., Kurths J. EEG biomarkers of activation of the lymphatic drainage system of the brain during sleep and opening of the blood-brain barrier. **Computational and Structural Biotechnology Journal** 21 (2023) 758–768 <https://doi.org/10.1016/j.csbj.2022.12.019>
IF=7.21 (Q1)
4. Postnov, D.; Semyachkina-Glushkovskaya, O.; Litvinenko, E.; Kurths, J.; Penzel, T. Mechanisms of Activation of Brain's Drainage during Sleep: The Nightlife of Astrocytes. **Cells** 2023, 12, 2667. <https://doi.org/10.3390/cells12222667>
IF=7.666 (Q1)
5. Oxana Semyachkina-Glushkovskaya, Konstantin Sergeev, Nadezhda Semenova, Andrey Slepnev, Anatoly Karavaev, Alexey Hramkov, Mikhail Prokhorov, Ekaterina Borovkova, Inna Blokhina, Ivan Fedosov, Alexander Shirokov, Alexander Dubrovsky, Andrey Terskov, Maria Manzhaeva, Valeria Krupnova, Alexander Dmitrenko, Daria Zlatogorskaya, Viktoria Adushkina, Arina Evsukova, Matvey Tuzhilkin, Inna Elizarova, Egor Ilyukov, Dmitry Myagkov, Dmitry Tuktarov, Jürgen Kurths. Machine learning technology for EEG-forecast of the blood-brain barrier leakage and the activation of brain's drainage system during isoflurane anesthesia. **Biomolecules**. 2023. 13, 1605. <https://doi.org/10.3390/biom13111605>
IF=6.064 (Q1)
6. Oxana Semyachkina-Glushkovskaya, Alexander Shirokov, Inna Blokhina, Valeria Telnova, Elena Vodovozova, Anna Alekseeva, Ivan Boldyrev, Ivan Fedosov, Alexander Dubrovsky, Alexandr Khorovodov, Andrey Terskov, Arina Evsukova, Daria Elovenko, Viktoria Adushkina, Maria Tzoy, Ilana Agranovich, Jürgen Kurth, Edik Rafailov. Intranasal delivery of liposomes to glioblastoma by photostimulation of the lymphatic system. **Pharmaceutics** 2023, 15(1), 36; <https://doi.org/10.3390/pharmaceutics15010036>
IF=6.29 (Q1)
7. Semyachkina-Glushkovskaya, O.; Bragin, D.; Bragina, O.; Socolovski, S.; Shirokov, A.; Fedosov, I.; Ageev, V.; Blokhina, I.; Dubrovsky, A.; Telnova, V.; Terskov, A.; Khorovodov, A.; Elovenko, D.; Evsukova, A.; Zhoy, M.; Agranovich, I.; Vodovozova, E.; Alekseeva, A.; Kurths, J.; Rafailov, E. Low-Level Laser Treatment Induces the Blood-Brain Barrier Opening and the Brain Drainage System Activation: Delivery of Liposomes into Mouse Glioblastoma. **Pharmaceutics** 2023, 15, 567. <https://doi.org/10.3390/pharmaceutics15020567>
IF=6.29 (Q1)
8. Semyachkina-Glushkovskaya, O.; Fedosov, I.; Penzel, T.; Li, D.; Yu, T.; Telnova, V.; Kaybeleva, E.; Saranceva, E.; Terskov, A.; Khorovodov, A.; Blokhina, I.; Kurths, J.; Zhu, D. Brain Waste Removal System and Sleep: Photobiomodulation as an Innovative Strategy

- for Night Therapy of Brain Diseases. *Int. J. Mol. Sci.* 2023, 24, 3221. <https://doi.org/10.3390/ijms24043221>
IF=6.208 (Q1)
9. Oxana Semyachkina-Glushkovskaya, Sergey Sokolovski, Ivan Fedosov, Alexander Shirokov, Nikita Navolokin, Alla Bucharskaya, Inna Blokhina, Andrey Terskov, Alexander Dubrovski, Valeria Telnova, Anna Tzven, Maria Tzoy, Arina Evsukova, Daria Zhatogorskaya, Viktoria Adushkina, Alexander Dmitrenko, Maria Manzhaeva, Valeria Krupnova, Alessio Noghero, Denis Bragin, Olga Bragina, Ekaterina Borisova, Jürgen Kurths, Edik Rafailov. Transcranial photosensitizer-free laser treatment of glioblastoma in rat brain. *Int. J. Mol. Sci.* 2023, 24, 13696. <https://doi.org/10.3390/ijms241813696>
IF=6.2 (Q1)
 10. Dongyu Li, Hao Lin¹, Silin Sun, Shaojun Liu, Zhang Liu, Yuening He, Jintan Zhu, Jianyi Xu, Oxana Semyachkina-Glushkovskaya, Tingting Yu, Dan Zhu. Photostimulation of lymphatic clearance of β - amyloid from mouse brain: new strategy for the therapy of Alzheimer's disease. *Front. Optoelectron.* (2023) 16:45. <https://doi.org/10.1007/s12200-023-00099-8>
IF=5.4 (Q1)
 11. Semyachkina-Glushkovskaya Oxana, Shirokov Alexander, Blokhina Inna, Fedosov Ivan, Terskov Andrey, Dubrovsky Alexander, Tsoy Maria, Zhatogorskaya Daria, Adushkina Viktoria, Evsukova Arina, Telnova Valeria, Tzven Anna, Krupnova Valeria, Manzhaeva Maria, Dmitrenko Alexander, Penzel Thomas, Kurths Jürgen. Mechanisms of phototherapy of Alzheimer's disease during sleep and wakefulness: the role of the meningeal lymphatics. *Front. Optoelectron.* 16, 22 (2023). <https://doi.org/10.1007/s12200-023-00080-5>
IF=5.4 (Q1)
 12. Semyachkina-Glushkovskaya, O.; Penzel, T.; Poluektov, M.; Fedosov, I.; Tzoy, M.; Terskov, A.; Blokhina, I.; Sidorov, V.; Kurths, J. Phototherapy of Alzheimer's Disease: Photostimulation of Brain Lymphatics during Sleep: A Systematic Review. *Int. J. Mol. Sci.* 2023, 24, 10946. <https://doi.org/10.3390/ijms241310946>
IF=6.208 (Q1)
 13. V. Dremin, O. Semyachkina-Glushkovskaya and E. Rafailov, "Direct Laser-Induced Singlet Oxygen in Biological Systems: Application From in Vitro to in Vivo," in IEEE *Journal of Selected Topics in Quantum Electronics*, vol. 29, no. 4: Biophotonics, pp. 1-11, July-Aug. 2023, Art no. 7200911, doi: 10.1109/JSTQE.2023.32465
IF=4.653 (Q1)
 14. Oxana Semyachkina-Glushkovskaya, Ivan Fedosov, Alexey Zaikin, Vasily Ageev, Egor Ilyukov, Dmitry Myagkov, Dmitry Tuktarov, Inna Blokhina, Alexander Shirokov, Andrey Terskov, Daria Zhatogorskaya, Viktoria Adushkina, Arina Evsukova, Alexander Dubrovsky, Maria Tsoy, Valeria Telnova, Maria Manzhaeva, Alexander Dmitrenko, Valeria Krupnova, and Jürgen Kurths, Technology of the photobiostimulation of the brain's drainage system during sleep for improvement of learning and memory in male mice, *Biomed. Opt. Express* 15, 44-58 (2024) <https://doi.org/10.1364/BOE.505618>
IF=3.562 (Q1)

15. G. A. Guyo, A. N. Pavlov, and O. V. Semyachkina-Glushkovskaya. Anesthesia effects in rat electrocorticograms characterized using detrended fluctuation analysis and its extension. *Eur. Phys. J. Spec. Top.* 2023. <https://doi.org/10.1140/epjs/s11734-023-01053-7>
IF=2.891 (Q2)
16. A. N. Pavlov, and O. V. Semyachkina-Glushkovskaya. Statistical analysis of local fluctuations in the signal profile: application to electrocorticograms. *Eur. Phys. J. Spec. Top.* 2023. <https://doi.org/10.1140/epjs/s11734-023-01047-5>
IF=2.891 (Q2)
17. Alexander Koronovskii Jr., Inna Blokhina, Alexander Dmitrenko, Matvey Tuzhilkin, Tatyana Moiseikina, Inna Elizarova, Oxana Semyachkina-Glushkovskaya, Alexey Pavlov. Extended Detrended Fluctuation Analysis of Coarse-Grained Time Series. *Diagnostics*. 2023, 13(1), 93. <https://doi.org/10.3390/diagnostics13010093>
IF=3.992 (Q2)
18. Blokhina, I.; Koronovskii, A.A., Jr.; Dmitrenko, A.V.; Elizarova, I.V.; Moiseikina, T.V.; Tuzhilkin, M.A.; Semyachkina-Glushkovskaya, O.V.; Pavlov, A.N. Characterization of Anesthesia in Rats from EEG in Terms of Long-Range Correlations. *Diagnostics* 2023, 13, 426. <https://doi.org/10.3390/diagnostics13030426>
IF=3.992 (Q2)
19. Maria Simonyan, Anna Fisun, Galina Afanaseva, Oxana Glushkovskaya-Semyachkina, Inna Blokhina, Anton Selskii, Maksim Zhuravlev and Anastasiya Runnova. Oscillatory wavelet-patterns in complex data: mutual estimation of frequencies and energy dynamics. *The European Physical Journal Special Topics*. 2023. C. 1-9. <https://doi.org/10.1140/epjs/s11734-022-00737-w>
IF=2.707 (Q2)
20. G. A. Guyo, O. N. Pavlova, I. A. Blokhina, O. V. Semyachkina-Glushkovskaya, and A. N. Pavlov. Multiresolution wavelet analysis of transients: numerical simulations and application to EEG. *Eur. Phys. J. Spec. Top.* 232, 635–641 (2023). <https://doi.org/10.1140/epjs/s11734-022-00710-7>
IF=2.707 (Q2)
21. Koronovskii, A.A., Blokhina, I.A., Pavlova, O.N., Semyachkina-Glushkovskaya O.V., Pavlov A.N. Extended detrended cross-correlation analysis of electrocorticograms. *Eur. Phys. J. Spec. Top.* (2022). <https://doi.org/10.1140/epjs/s11734-022-00711-6>
IF=2.707 (Q2)
22. Oxana Semyachkina-Glushkovskaya, Denis Bragin, Ivan Fedosov, Inna Blokhina, Alexander Khorovodov, Andrey Terskov, Alexander Shirokov, Alexander Dubrovsky, Valeria Vinnik, Arina Evsukova, Daria Elovenko, Viktoria Adushkina, Maria Tzoy, Alexander Dmitrenko, Valeria Krupnova, Maria Manzhaeva, Ilana Agranovich, Elena Saranceva, Tatyana Iskra, Ekaterina Lykova, Sergey Sokolovski, Edik Rafailov, and Jürgen Kurths. Mechanisms of Photostimulation of Brain's Waste Disposal System: The Role of Singlet Oxygen. In: Scholkmann, F., LaManna, J., Wolf, U. (eds) Oxygen Transport to Tissue XLIV. ISOTT 2022. *Advances in Experimental Medicine and Biology*, 2023. vol 1438. Springer, Cham. https://doi.org/10.1007/978-3-031-42003-0_8
IF=3.60 (Q2)

23. Semyachkina-Glushkovskaya, O.; Terskov, A.; Khorovodov, A.; Telnova, V.; Blokhina, I.; Saranceva, E.; Kurths, J. Photodynamic Opening of the Blood–Brain Barrier and the Meningeal Lymphatic System: The New Niche in Immunotherapy for Brain Tumors. **Pharmaceutics**. 2022, 14, 2612. <https://doi.org/10.3390/pharmaceutics14122612>
IF=6.29 (Q1)
24. Zschocke J, Leube J, Glos M, Semyachkina-Glushkovskaya O, Penzel T, Bartsch R, Kantelhardt J. Reconstruction of Pulse Wave and Respiration From Wrist Accelerometer During Sleep. **IEEE Trans Biomed Eng.** 2022 69(2):830-839. doi: 10.1109/TBME.2021.3107978
IF=4.538 (Q1)
25. Semyachkina-Glushkovskaya O, Diduk S, Anna E, Elina D, Artem K, Khorovodov A, Shirokov A, Fedosov I, Dubrovsky A, Blokhina I, Terskov A, Navolokin N, Evsukova A, Elovenko D, Adushkina V, Kurths J. (2022) Music improves the therapeutic effects of bevacizumab in rats with glioblastoma: Modulation of drug distribution to the brain. **Front. Oncol.** 2022. 12:1010188. doi: 10.3389/fonc.2022.1010188
IF=5.738 (Q1)
26. Oxana Semyachkina-Glushkovskaya, Thomas Penzel, Inna Blokhina, Alexander Khorovodov, Ivan Fedosov, Tingting Yu, Georgy Karandin, Arina Evsukova, Daria Elovenko, Viktoria Adushkina, Alexander Shirokov, Alexander Dubrovsky, Andrey Terskov, Nikita Navolokin, Maria Tzoy, Vasily Ageev, Ilana Agranovich, Valeria Telnova, Anna Tsven2, Jürgen Kurths. Night photostimulation of clearance of beta-amyloid from mouse brain: new strategies in preventing Alzheimer’s disease. **Cells** 2021, 10(12), 3289; <https://doi.org/10.3390/cells10123289>
IF= 6.6 (Q1)
27. Oxana Semyachkina-Glushkovskaya, Ivan Fedosov, Alexander Shirokov, Elena Vodovozov, Anna Alekseev, Alexandr Khorovodov, Inna Blokhina, Andrey Terskov, Aysel Mamedova, Maria Klimova, Alexander Dubrovsky, Vasily Ageev, Ilana Agranovich, Valeria Vinnik, Anna Tsven, Sergey Sokolovski, Edik Rafailov, Thomas Penzel, Jürgen Kurths. Photomodulation of lymphatic delivery of liposomes to the brain bypassing the blood-brain barrier: new perspectives for glioma therapy. **Nanophotonics**. 2021, pp. 000010151520210212. <https://doi.org/10.1515/nanoph-2021-0212>
IF=8.499 (Q1)
28. Oxana Semyachkina-Glushkovskaya, Dmitry Postnov, Anastasia Lavrova, Ivan Fedosov, Ekaterina Borisova, Vladimir Nikolenko, Thomas Penzel, Jurgen Kurths, Valery Tuchin. Biophotonic Strategies of Measurement and Stimulation of the Cranial and the Extracranial Lymphatic Drainage Function. **IEEE Journal of Selected Topics in Quantum Electronics**, vol. 27, no. 4, pp. 1-13, July-Aug. 2021, Art no. 7400313, doi: 10.1109/JSTQE.2020.3045834.
IF= 4.917 (Q1)
29. Anastasiya Runnova, Maksim Zhuravlev, Rodion Ukolov, Inna Blokhina, Alexander Dubrovski, Nikita Lezhnev, Evgeniya Sitnikova, Elena Saranceva, Anton Kiselev, Anatoly Karavaev, Anton Selskii, Oxana Semyachkina-Glushkovskaya, Thomas Penzel & Jurgen Kurths. Modified wavelet analysis of ECoG-pattern as promising tool for detection of the blood–brain barrier leakage. **Scientific Reports** 11, 18505 (2021). <https://doi.org/10.1038/s41598-021-97427-9>
IF= 4.379 (Q1)

30. Karavaev A.S., Ishbulatov Yu.M., Prokhorov M.D., Ponomarenko V.I., Kiselev A.R., Runnova A.E., Hramkov A.N., Semyachkina-Glushkovskaya O.V., Kurths J., Penzel T. Simulating dynamics of circulation in the awake state and different stages of sleep using non-autonomous mathematical model with time delay. **Front. Physiol.**, 13 January 2021 | <https://doi.org/10.3389/fphys.2020.612787>
IF= 4.134 (Q1)
31. Semyachkina-Glushkovskaya, O.; Mamedova, A.; Vinnik, V.; Klimova, M.; Saranceva, E.; Ageev, V.; Yu, T.; Zhu, D.; Penzel, T.; Kurths, J. Brain Mechanisms of COVID-19-Sleep Disorders. **Int. J. Mol. Sci.** 2021, 22, 6917. <https://doi.org/10.3390/ijms22136917>
IF=5.923 (Q1)
32. Zschocke J, Leube J, Glos M, Semyachkina-Glushkovskaya O, Penzel T, Bartsch R, Kantelhardt JW. Reconstruction of Pulse Wave and Respiration from Wrist Accelerometer During Sleep. **IEEE Trans Biomed Eng.** 2021 Aug 26;PP. doi: 10.1109/TBME.2021.3107978. <https://pubmed.ncbi.nlm.nih.gov/34437055>
IF= 4.424 (Q1)
33. A.N. Pavlov, A.P. Khorovodov, A. T. Mamedova, A.A. Koronovski, O.N. Pavlova, O. V. Semyachkina-Glushkovskaya, Y. Kurths. Changes in blood-brain barrier permeability characterized from electroencephalograms with wavelets and fluctuation analysis. **Eur. Phys. J. Plus** (2021) <https://doi.org/10.1140/epjp/s13360-021-01593-8>
IF= 3.228 (Q1)
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