CURRICULUM VITAE

IVAN V. FEDOSOV

Personal details

Full name: Fedosov Ivan Vladlenovich
Date of birth: April 23, 1977

Affiliation

Associate professor, Department of Optics and Biophotonics,
Saratov State University, 83, Astrakhanskaya, 410012, Saratov, Russian Federation.

Degrees:

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Saratov State University, Saratov, Russia	MS	1994-1999	Physics, Biomedical Optics
Saratov State University, Saratov, Russia	PhD	1999-2002	Physics, Optics, Biophysics
Specialization 03.01.02 – Biophysics (Physics).			

Professional experience

1999-2002 Ph.D. Student of Optics department of Saratov State University (SSU)
2002-2004 Optics department of SSU, Researcher of Research Institute of Mechanics and Physics of SSU

2004-present Associate Professor of Optics and Biomedical Physics department of SSU and Senior researcher of Research-Educational Institute of Optics and Biophotonics of SSU.

Teaching experience

General course of physics - Optics; special courses for undergraduate, MS and PhD students: Modern optical instruments, Technical optics and optical systems design, Digital signal and image processing etc.

Research interests

Biomedical optics, optical measurements and sensing in biology and medicine, statistical optics and speckle metrology, optical imaging and microscopy.

Honors and awards

2001, 2002, 2003, 2004 – Individual Financial Support (IFS) of REC006;

2002 – Individual Travel Grant of SPIE – The International Society for Optical Engineering for participation in SPIE Annual meeting conference (July 7-15, 2002, Seattle, WA, USA);

2003 – Individual Travel Grant of SPIE – The International Society for Optical Engineering for Participation in Biophotonics'03 Graduate Summer School (June 15-21, 2003, Isle Ven, Sweden);

2004 – 2007 – CRDF Fellow of BRHE Post-doctoral fellowship program;

2005 – Bronze Medal of The First Saratov Salon of Inventions, Innovations and Investments, October 4-6, 2005, Saratov, Russia;

2007 – The Academy of Finland individual grant for Participation of ALT 2007 conference (September 3-7, Levi, Finland)

Projects

Principal investigator of projects supported by grants:
RFBR #03-02-17359 in **2003-2005;**
The President of RF grant # in **2005-2006;**
State task in the field of research No. 2014/203 Scientific research No. 1490, **2014-2016**.

Co-investigator in more than 35 research projects, supported through the grants of CRDF**,** RFBR, The President of Russian Federation, RSCF, etc.

Selected book chapters

1. Ivan V. Fedosov, Yoshihisa Aizu, Valery V. Tuchin, Naomichi Yokoi, Izumi Nishidate, Vladimir P. Zharov, and Ekaterina I. Galanzha Laser Speckles, Doppler and Imaging Techniques for Blood and Lymph Flow Monitoring in Handbook of Optical Biomedical Diagnostics, Second Edition, Volume 2: Methods 25 October 2016 pages: 688 ISBN: 9781628419139

2. Fedosov I. V., Tuchin V. V. Bioflow Measuring: Laser Doppler and Speckle Techniques in Handbook of Coherent-Domain Optical Methods: Biomedical Diagnostics, Environmental Monitoring, and Materials Science. – 2013. – C. 487-563.

Selected papers

1. OxanaSemyachkina-Glushkovskaya, Ivan Fedosov, Alexander Shirokov, Elena Vodovozov, Anna Alekseev, AlexandrKhorovodov, Inna Blokhina, Andrey Terskov, AyselMamedova, Maria Klimova, Alexander Dubrovsky, VasilyAgeev, IlanaAgranovich, Valeria Vinnik, Anna Tsven, Sergey Sokolovski, EdikRafailov, 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)

2. OxanaSemyachkina-Glushkovskaya, Dmitry Postnov, Anastasia Lavrova, Ivan Fedosov, Ekaterina Borisova, Vladimir Nikolenko, Thomas Penzel, JurgenKurths, 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)

3. O. Semyachkina-Glushkovskaya, A. Esmat, D. Bragin, O. Bragina, A. A. Shirokov, N. Navolokin, Y. Yang, A. Abdurashitov, A. Khorovodov, A. Terskov, M. Klimova, A. Mamedova, Fedosov I., V. Tuchin, J. Kurths. Phenomenon of music-induced opening of the blood-brain barrier in healthy mice. Proceedings of The Royal Society B 2020: 20202337; https://doi.org/10.1098/rspb.2020.2337 IF= 5.386 (Q1)

4. Kurochkin, Maxim A., Ivan V. Fedosov, and Dmitry E. Postnov. "Toward label-free imaging of brain vasculature: frame-by-frame spatial adaptive filtration and adaptive PIV approaches." The European Physical Journal Plus 136.7 (2021): 1-11. IF = 3.91 (Q2)

5. O. Semyachkina-Glushkovskaya, A. Esmat, D. Bragin, O. Bragina, A. A. Shirokov, N. Navolokin, Y. Yang, A. Abdurashitov, A. Khorovodov, A. Terskov, M. Klimova, A. Mamedova, Fedosov I., V. Tuchin, J. Kurths. Phenomenon of music-induced opening of the blood-brain barrier in healthy mice. Proceedings of The Royal Society B. 2020. Т. 287. № 1941. С. 20202337.

6. Namykin A.A., Khorovodov A.P., Semyachkina-Glushkovskaya O.V., Tuchin V.V., Fedosov I.V. Photoinduced enhancement of evans blue dye fluorescence in water solution of albumin//Optics and Spectroscopy. 2019. Т. 126. № 5. С. 554-559.

7. Namykin A.A., Shushunova N.A., Ulanova M.V., Semyachkina-Glushkovskaya O.V., Tuchin V.V., Fedosov I.V.,Intravital molecular tagging velocimetry of cerebral blood flow using evans blue//Journal of Biophotonics. 2018. С. e201700343.

8. Semyachkina-Glushkovskaya O., Borisova E., Fedosov I., Namykin A., Abdurashitov A., Shirokov A., Navolokin N., Ulanova M., Shushunova N., Khorovodov A., Agranovich I., Bodrova A., Sagatova M., Shareef A.E., Saranceva E., Iskra T., Dvoryatkina M., Zhinchenko E., Sindeeva O., Kurths J. et al., Photodynamic opening of the blood-brain barrier and pathways of brain clearing//Journal of Biophotonics. 2018. Т. 11. № 8. С. e201700287.

9. Voronin D.V., Sindeeva O.A., Mayorova O., Gorin D.A., Kurochkin M.A., Fedosov I.V., Tuchin V.V., Semyachkina-Glushkovskaya O., Sukhorukov G.B. In vitro and in vivo visualization and trapping of fluorescent magnetic microcapsules in a bloodstream//ACS Applied Materials & Interfaces. 2017. Т. 9. № 8. С. 6885-6893.

10. Semyachkina-Glushkovskaya O., Namikin A., Fedosov I., Abdurashitov A., Zhinchenko E., Gekalyuk A., Ulanova M., Rezunbaeva V., Tuchin V., Zhu D., Borisova E., Avramov L., Luo Q. Hypoxia and neonatal haemorrhagic stroke: experimental study of mechanisms//Advances in Experimental Medicine and Biology. 2016. Т. 923. С. 173-179.

11. Semyachkina-Glushkovskaya O., Serov A., Zinchenko E., Tuchin V., Kurths J., Borisova E., Avramov L., Abakumov M., Chekhonin V., Gorin D., Fedosov I., Namykin A., Abdurashitov A., Lychagov V., Pavlov A., Navolokin N., Maslyakova G., Shirokov A., Zhu D., Luo Q. et al.the stress and vascular catastrophes in newborn rats: mechanisms preceding and accompanying the brain hemorrhages //Frontiers in Physiology. 2016. Т. 7. № JUN. С. 210.

12. Borozdova M.A., Fedosov I.V., Tuchin V.V., Laser doppler anemometer signal processing for blood flow velocity measurements//Quantum Electronics. 2015. Т. 45. № 3. С. 275-282.

13. Fedosov I.V., Tuchin V.V., Nefedov I.S., Khlebtsov B.N. Measurements of the diffusion coefficient of nanoparticles by selective plane illumination microscopy//Optics and Spectroscopy. 2009. T. 107. № 6. C. 846-852.

14. Genina E.A., Fedosov I.V., Bashkatov A.N., Zimnyakov D.A., Tuchin V.V., Altshuler G.B. Visualisation of the distributions of melanin and indocyanine green in biological tissues// Quantum Electronics. 2008. T. 38. № 3. C. 263-268.

15. Fedosov I.V., Tuchin V.V., Nefedov I.S., Khlebtsov B.N. Dynamic ultramicroscopy of laser-induced flows in colloidal solutions of plasmon-resonance particles//Quantum Electronics. 2008. T. 38. № 6. C. 530-535.

16. Fedosov I.V., Tuchin V.V. The space-time correlation of the intensity of a speckle field formed as a result of scattering of focused coherent radiation by a capillary liquid flow containing scattering particles//Optics and Spectroscopy. 2002. T. 93. № 3. C. 434-438.

17. Fedosov I.V., Galanzha E.I., Solov'eva A.V., Tuchin V.V. Laser monitoring of the flow velocity in lymphatic microvessels based on a spatiotemporal correlation of the dynamic speckle fields//Technical Physics Letters. 2002. T. 28. № 8. C. 690-692.

18. Fedosov I.V., Tuchin V.V., Galanzha E.I., Solov'eva A.V., Stepanova T.V. Recording of lymph flow dynamics in microvessels using correlation properties of scattered coherent radiation// Quantum Electronics. 2002. T. 32. № 11. C. 970-974.

19. Fedosov I.V., Ulyanov S.S. Specific features of the manifestation of the doppler effect in diffraction of focused coherent beams in a scattering flow//Optics and Spectroscopy. 2001. T. 91. № 2. C. 278-282.

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