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Тема диссертации	Картирование линейных и нелинейных свойств упругих сред на основе компрессионной ОКТ-эластографии для задач биомедицинской диагностики
Публикации	<p>1. " Flexible computationally efficient platform for simulating scan formation in optical coherence tomography with accounting for arbitrary motions of scatterers ", Alexey A Zykov, Alexander L Matveyev, Lev A Matveev, Alexander A Sovetsky, Vladimir Y Zaitsev, Journal of Biomedical Photonics & Engineering , 7(1), 010304 (2021). https://doi.org/10.18287/JBPE21.07.010304</p> <p>2. "Computationally efficient model of OCT scan formation by focused beams and its usage to demonstrate a novel principle of OCT-angiography" Alexander L Matveyev, Lev A Matveev, Alexander A Moiseev, Alexander A Sovetsky, Grigory V Gelikonov and Vladimir Y Zaitsev, Laser Physics Letters, 17(11), 115604 (2020) https://doi.org/10.1088/1612-202X/abac16</p> <p>3. "Multimodal OCT for Malignancy Imaging" Grigory Gelikonov, Valentin Gelikonov, Alexander Moiseev, Pavel Shilyagin, Sergey Ksenofontov, Irina Kasatkina, Dmitriy Terpelov, Lev Matveev, Alexander Matveyev, Vladimir Zaitsev, Alexander Sovetsky, Natalia Gladkova, Elena V. Zagaynova, Marina Sirotkina, Ekaterina Gubarkova, Elena Kiseleva, Anton Plekhanov, Vadim Elagin, Konstantin Yashin, Dmitry Vorontsov, Elena Sedova, Anna Maslennikova, Sergey Kuznetsov, Alex Vitkin. In: Tuchin V.V., Popp J., Zakharov V. (eds) Multimodal Optical Diagnostics of Cancer. Springer, Cham. pp 425-464 (2020) https://doi.org/10.1007/978-3-030-44594-2_12</p> <p>4. "Strain and elasticity imaging in compression optical coherence elastography: the two-decade perspective and recent advances" Vladimir Y Zaitsev, Alexander L Matveyev, Lev A Matveev, Alexander A Sovetsky, Matt S Hepburn, Alireza Mowla, Brendan F Kennedy, Journal of Biophotonics, e202000257 (2020) https://doi.org/10.1002/jbio.202000257</p> <p>5. "Histological validation of in vivo assessment of cancer tissue inhomogeneity and automated morphological segmentation enabled by Optical Coherence Elastography" Anton A Plekhanov, Marina A Sirotkina, Alexander A Sovetsky, Ekaterina V Gubarkova, Sergey S Kuznetsov, Alexander L Matveyev, Lev A Matveev, Elena V Zagaynova, Natalia D Gladkova, Vladimir Y Zaitsev, Scientific Reports, 10(1), 1-16 (2020) https://doi.org/10.1038/s41598-020-68631-w</p> <p>6. "Observation of internal stress relaxation in laser-reshaped cartilaginous implants using OCT-based strain mapping" Yulia M</p>

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<p>Участие в конференциях</p>	<ol style="list-style-type: none"> 1. "Relaxation and osmotic-induced slow strain mapping in biological tissues by optical coherence elastography," Yu. M. Alexandrovskaya, O. I. Baum, A. A. Sovetsky, L. A. Matveev, A. L. Matveyev, V. Yu. Zaitsev, Proc. SPIE 11845, Saratov Fall Meeting 2020: Optical and Nanotechnologies for Biology and Medicine, 1184503 (4 May 2021) https://doi.org/10.1117/12.2590710 2. "Numerical simulation in optical coherence tomography as a tool for development of emerging OCT-modalities," Lev A. Matveev, Alexander L. Matveyev, Alexander A. Moiseev, Alexander A. Sovetsky, Alexey A. Zykov, Grigory V. Gelikonov, Vladimir Y. Zaitsev, Proc. SPIE 11846, Saratov Fall Meeting 2020: Laser Physics, Photonic Technologies, and Molecular Modeling, 118460P (4 May 2021) https://doi.org/10.1117/12.2590750 3. "OCE-based quasistatic elasto-spectroscopy of living and freshly excised tumor tissue for histology-like morphological segmentation and express assessment of tumor subtypes", Vladimir Y. Zaitsev, Aleksander L Matveyev, Lev Matveev, Alexander Sovetsky, Anton Plekhanov, Ekaterina Gubarkova, Marina Sirotkina, Elena V. Zagaynova M.D., Natalia Gladkova, Proc. SPIE 11645, Optical Elastography and Tissue Biomechanics VIII, 116450J (5 March 2021); https://doi.org/10.1117/12.2587183 4. "Spatially-resolved slow dynamics of strains due to residual stresses in cartilaginous implants visualized by phase-sensitive optical coherence tomography", Yu. M. Alexandrovskaya, O. I. Baum, A. A. Sovetsky, A. L. Matveyev, L. A. Matveev, E. N. Sobol, V. Yu. Zaitsev, Proc. SPIE 11641, Dynamics and Fluctuations in Biomedical Photonics XVIII, 116410S (5 March 2021); https://doi.org/10.1117/12.2588236 5. "Optical coherence elastography to determine the high- and low-grade colon adenocarcinoma", Anton A. Plekhanov, Marina A. Sirotkina, Alexander A. Sovetsky, Sergey S. Kuznetsov, Lev A. Matveev, Vladimir E. Zagainov, Ekaterina V. Gubarkova, Alexander L. Matveyev, Elena V. Zagaynova, Vladimir Y. Zaitsev, Natalia D. Gladkova, Proc. SPIE 11645, Optical Elastography and Tissue Biomechanics VIII, 116450X (5 March 2021); https://doi.org/10.1117/12.2578302 6. "Multi-factor modeling of OCT-scan formation in the presence of scatterer motions", A. L. Matveyev; L. A. Matveev; A. A. Sovetsky; A. A. Zykov; A. A. Moiseev; G.V. Gelikonov; A. Vitkin; V.Y. Zaitsev, 2020 International Conference Laser Optics (ICLO), pp. 1-1 (2020) https://doi.org/10.1109/ICLO48556.2020.9285620. 7. "Determining morphological structures' stiffness values of tumor tissue by optical coherence elastography", Anton A. Plekhanov, Marina A. Sirotkina, Vladimir Y. Zaitsev, Ekaterina V. Gubarkova, Sergey S. Kuznetsov, Elena N. Grigoreva, Alexander A. Sovetsky, Lev A.

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	<p>Optical and Nano-Technologies for Biology and Medicine, 1106506 (2019) https://doi.org/10.1117/12.2521571</p> <p>21. “Comparison of elastic properties of tissue samples in various pathological states using optical coherence elastography” Ekaterina V Gubarkova, Alexander A Sovetsky, Vladimir Yu Zaitsev, Lev A Matveev, Alexander L Matveyev, Dmitry A Vorontsov, Lydia B Timofeeva, Elena B Kiseleva, Alexey Yu Vorontsov, Irina A Kuznetsova, Natalia D Gladkova, Saratov Fall Meeting 2018: Optical and Nano-Technologies for Biology and Medicine, 110650D (2019) https://doi.org/10.1117/12.2521529</p> <p>22. “Phase-sensitive OCT in monitoring of slow-rate strains in laser tissue reshaping” VY Zaitsev, LA Matveev, AL Matveyev, AA Sovetsky, GV Gelikonov, OI Baum, AI Omelchenko, AV Yuzhakov, EN Sobol, Optical Elastography and Tissue Biomechanics VI, 108800K (2019) https://doi.org/10.1117/12.2508832</p> <p>23. “Thermo-mechanical mechanism of laser-induced pore-formation in sclera for glaucoma treatment: AFM and OCT investigations”, OI Baum, AI Omelchenko, AV Yuzhakov, V Zaitsev, AA Sovetsky, LA Matveev, EN Sobol, Biophotonics: Photonic Solutions for Better Health Care VI, 106851T (2018) https://doi.org/10.1117/12.2309688</p> <p>24. “Multimodal OCT characterization of human breast cancer morphological types: preliminary study”, EV Gubarkova, AA Sovetsky, LA Matveev, AL Matveyev, V Yu Zaitsev, AA Moiseev, DA Vorontsov, A Yu Vorontsov, SS Kuznetsov, ND Gladkova, MA Sirotkina, Biophotonics: Photonic Solutions for Better Health Care VI, 106853B (2018) https://doi.org/10.1117/12.2306450</p> <p>25. “OCT-based characterization of the nonlinear properties of biological tissues in various states”, Alexandr A Sovetsky, Ekaterina V Gubarkova, Lev A Matveev, Alexander L Matveyev, Marina A Sirotkina, Natalia D Gladkova, Vladimir Y Zaitsev, Biophotonics: Photonic Solutions for Better Health Care VI, 1068536 (2018) https://doi.org/10.1117/12.2306246</p> <p>26. “OCT-based label-free 3D mapping of lymphatic vessels and transparent interstitial-fluid-filled dislocations”, LA Matveev, VV Demidov, AA Sovetsky, AA Moiseev, AL Matveyev, GV Gelikonov, VY Zaitsev, A Vitkin, 2018 International Conference Laser Optics (ICLO), 512 (2018) https://doi.org/10.1109/LO.2018.8435727</p> <p>27. “Monitoring of slow deformations in laser tissue reshaping with optical coherence elastography”, VY Zaitsev, LA Matveev, AL Matveev, AA Sovetsky, DV Shabanov, GV Gelikonov, OI Baum, A Yuzhakov, EN Sobol, 2018 International Conference Laser Optics (ICLO), 510 (2018) https://doi.org/10.1109/LO.2018.8435599</p> <p>28. “Optical coherence elastography assesses tissue modifications in laser reshaping of cornea and cartilages” V.Y. Zaitsev, A.L. Matveyev, L.A. Matveev, G.V. Gelikonov, D.V. Shabanov, A.A. Sovetsky, A.I.</p>
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<p>Участие в грантах</p>	<p>Грант РФФИ № 16-15-10274 (“Новые ОКТ методы как основа контрольных систем с обратной связью при разработке нового поколения лазерных медицинских технологий для управляемой коррекции формы хрящей и роговицы глаза”)</p> <p>Грант РФФИ № 17-72-20249 (“Использование метода синтеза апертуры для увеличения информативности Оптической Когерентной Томографии в исследованиях in vivo”)</p> <p>Грант РФФИ № 16-02-00642 А (“Развитие методов микромасштабного картирования реологических/релаксационных свойств биотканей на основе анализа динамики спекловой структуры в спектральной ОКТ с апробацией на сосудах с целью диагностики нестабильных атеросклеротических бляшек”)</p> <p>Грант РФФИ № 18-32-00608 мол_а (“Сравнительное исследование</p>

	<p>упругих свойств биологических тканей различных типов/патологических состояний методами оптической когерентной эластографии”)</p> <p>Грант РФФИ № 18-32-20056 мол_а_вед (“Нелинейная оптическая когерентная эластография как новый метод исследования упругих нелинейных свойств биотканей и их использование для дифференцирования различных типов патологических состояний ткани”)</p> <p>Грант РФФИ № 18-42-520018 р_а (“Новые функциональные возможности оптической когерентной томографии”)</p> <p>Грант РФФИ № 19-02-00645 А (“Радиофизический подход к моделированию сигнала в мультимодальной оптической когерентной томографии: выявление возможностей ОКТ-методов путем численного моделирования и сопоставление с физическими экспериментами”)</p> <p>Грант РФФИ № 19-05-0053 А (“Трещино- и контакто-содержащие среды: развитие нетрадиционных подходов к описанию их акустоупругих свойств для получения информации о структурных характеристиках из сравнения с данными экспериментов”)</p> <p>Грант РФФИ № 19-32-90110 Аспиранты (“Новый метод морфологического сегментирования в оптической когерентной томографии на основе анализа эластографических ОКТ-изображений ткани”)</p> <p>Грант Президента Российской Федерации МК-3416.2018.2 (“Разработка принципов высокоразрешающей трехмерной лимфоангиографии без использования контрастных агентов на основе спектральной ОКТ для увеличения эффективности диагностики и контроля лечения онкологических заболеваний”)</p> <p>УМНИК-18 №14017ГУ/2019 (“Разработка компрессионной оптической когерентной эластографии для оценки эффективности дерматологических средств и процедур”)</p>	
<p>Научно-педагогическая деятельность</p>	<p>Тьюторство над студентами первого курса ВШОПФ</p>	
<p>Успеваемость</p>		
<p>дисциплина</p>	<p>дата экзамена</p>	<p>оценка</p>
<p>Радиофизика</p>	<p>18.12.2020</p>	<p>хорошо</p>
<p>Иностранный язык</p>	<p>03.06.2019</p>	<p>хорошо</p>
<p>История и философия науки</p>	<p>13.06.2019</p>	<p>отлично</p>
<p>Личные достижения (дипломы, грамоты, сертификаты, именные стипендии)</p>	<p>1) Сертификат финалиста конкурса инновационных проектов «Умник-2018»</p> <p>2) Сертификат за второе место в номинации «Лучший студенческий постер» на международной конференции SFM 2017(25-30 сентября 2017 г.)</p> <p>3) Диплом I степени за устный доклад на XXIV Нижегородской сессии молодых учёных (21-24 мая 2019 г.)</p> <p>4) Диплом за 3 место в секции «Биофотоника» на XVII</p>	

	<p>Всероссийской молодёжной Самарской Конкурс-конференции научных работ по оптике и лазерной физике.</p> <p>5) Диплом 2 степени на XXII Конкурсе работ молодых учёных ИПФ РАН</p> <p>6) Диплом за 1 место в секции Биомед (медицина, здравоохранение и биотехнологии) XIII Областного конкурса молодёжных инновационных команд РОСТ 2019 за проект «Разработка прижизненной экспресс методики определения лечебного патоморфоза методом оптической когерентной эластографии»</p> <p>7) Диплом за 1 место в секции «Биофотоника» на XVIII Всероссийской молодёжной Самарской Конкурс-конференции научных работ по оптике и лазерной физике.</p> <p>8) Финалист V Всероссийского научного форума "Наука будущего - наука молодых"</p>
<p>Дополнительная информация</p>	<p>Обзор результатов, представленных на сайте ИПФ РАН в разделе Важные результаты, «Мультиформальный ОКТ комплекс для лабораторных и клинических применений» был включен в число важнейших результатов года, рекомендуемых в отчет РАН.</p> <p>Патент «Способ прижизненной оценки микроструктуры опухолевой ткани в эксперименте» Автор(ы) Плеханов Антон Андреевич, Сироткина Марина Александровна, Губарькова Екатерина Владимировна, Зайцев Владимир Юрьевич, Советский Александр Александрович, Кузнецов Сергей Станиславович, Матвеев Лев Александрович, Матвеев Александр Львович, Загайнова Елена Вадимовна, Гладкова Наталья Дорофеевна, №2020114397/14(024020) дата 22.04.2020</p>