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R02. High Power Lasers - Fiber, Solid State, Gas and Hybrid

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SYC-p05	Laser-pumping attack on QKD sources M. Fadeev ^{1,2} , A.A. Ponomareva ¹ , R. Shakhovoy ^{3,4,5} , V. Makarov ^{1,5,6} ; ¹ Russian Quantum Center, Skolkovo; ² ITMO University; ³ QRate, Skolkovo; ⁴ NTI Center for Quantum Communications, National University of Science and Technology MISIS; ⁵ Moscow Technical University of Communications and Informatics, Russia; ⁶ University of Science and Technology of China, China	562
SYC-p07	Nanocomposite coatings to improve the hemocompatibility of medical devices K.D. Popovich ^{1,2} , S.V. Selishchev ¹ , A.Yu. Gerasimenko ^{1,2} , E.A. Gerasimenko ¹ ; ¹ Inst. of Biomedical Systems, National Research Univ. of Electronic Technology, MET, ² Inst. for Bionic Technologies and Engineering, I.M. Sechenov First Moscow State Medical Univ., Russia	563
SYC-p08	Low-coherence interferometry biosensors: real-time molecular detection with glass sensor chips D.O. Novichikhin ¹ , M.N. Zaikina ¹ , Z.G. Zaitseva ^{1,2} , N.A. Belyakov ^{1,2} ; ¹ Prokhorov General Physics Institute RAS; ² National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Russia	564
SYC-p09	Biocompatible pH sensors based on the Re(I) luminophores containing oligo(ethylene glycol) groups K.S. Kisel ¹ , N.A. Zharskaia ¹ , S.A. Silonov ^{1,2} , J.R. Shkrirova ¹ ; ¹ St. Petersburg State University, ² Institute of Cytology RAS, Russia	565
SYC-p11	Temperature stabilized microfluidic chip for plasmonic fiber biosensor L.I. Fatkhutdinova, D.O. Gagarinova, A.F. Cherednikova, A. Kokhanovskiy, M.V. Zyuzin; School of Physics and Engineering, ITMO University, Russia	566
SYC-p12	Laser synthesis of cobalt-based nanoparticles in gaseous media and magnetic field M.A. Dzus, A.S. Chemikov, A.V. Kharkova, D.A. Kochuev, E.S. Oparin, D.V. Abramov, A.F. Galkin, K.S. Khorkov; Vladimir State University, Russia	567
SYC-p13	Laser formation of a carbon conductive network for a gesture recognition system A.S. Morozova ¹ , N.A. Nikitina ¹ , D.I. Ryabkin ^{1,2} , V.V. Suchkova ¹ , A.V. Kuksin ¹ , E.S. Pyankov ¹ , L.P. Ichkitidze ^{1,2} , E.A. Gerasimenko ¹ , S.V. Selishchev ¹ , A.Yu. Gerasimenko ^{1,2} ; ¹ National Research Univ. of Electronic Technology, ² I.M. Sechenov First Moscow State Medical Univ., Russia	568
SYC-p14	Interferometric studies of nanoparticle conjugates for ultrasensitive detection of zearalenone in food J.A. Malkerov ^{1,2} , A.S. Rakitina ^{1,2} , G.M. Sorokin ³ , A.I. Nikitin ⁴ , A.G. Burenin ¹ , A.M. Skirda ^{1,5} , S.L. Znoyko ¹ ; ¹ Prokhorov General Physics Institute RAS, ² National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), ³ Chuvash State University, ⁴ Volga branch of MADI, Russia, ⁵ Moscow Institute of Physics and Technology	569

SYC-p16	Influenza A virus detection via Ag@Si SERS and machine learning. <i>K. Prigoda¹, A. Ermina¹, A. Tabarov², V. Levitskii³, O. Andreeva², A. Gazizulin², V. Bolshakov¹, S. Pavlov¹, A. Zheltukhina⁴, D. Danilenko⁴, Yu. Zharova¹, V. Vitkin², ¹Ioffe Institute; ²ITMO University; ³RnD Center TFTE; ⁴Smorodintsev Research Institute of Influenza, Russia</i>	570
SYC-p17	Secure laser source for QKD systems <i>M. Fadeev^{1,2}, A.A. Ponomova¹, A. Huang³, R. Shakhovoy^{4,5,6}, V. Makarov^{1,5,7}, ¹Russian Quantum Center, Skolkovo; ²ITMO University, Russia; ³National University of Defense Technology, China; ⁴QRate, Skolkovo; ⁵NTI Center for Quantum Communications, National University of Science and Technology MSIS; ⁶Moscow Technical University of Communications and Informatics, Russia; ⁷University of Science and Technology of China, China</i>	571
SYC-p20	Surface-enhanced Raman scattering of electrospun non-woven fibers: synthesis of silver nanoparticles and their effect on the properties of SERS materials <i>V. Bakal, A.M. Kartashova, P.A. Demina, I.O. Kozhevnikov, E.S. Prikhodzhenko; Science Medical Center, Saratov State University, Russia</i>	572
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SYC-p23	Fluorescently controlled investigation of super-enhancers with CRISPR interference and CRISPR prime editing systems <i>N.N. Orlova¹, M.G. Gladkova^{1,2}, G.A. Ashniev¹, A.V. Orlov¹, ¹Prokhorov General Physics Institute RAS; ²Faculty of Bioengineering and Bioinformatics, Lomonosov Moscow State University, Russia</i>	574
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SYC-p25	Biocompatible composite material for the regeneration of large tissue defects <i>U.E. Kurikova^{1,2}, E.A. Gerasimenko², I.A. Suetina³, M.V. Mezentseva³, L.I. Russu³, G.Yu. Galechyan⁴, A.Yu. Gerasimenko^{2,4}, ¹World-Class Research Center "Digital Biodesign and Personalized Healthcare", I.M. Sechenov First Moscow State Medical University; ²Inst. of Biomedical Systems, National Research Univ. of Electronic Technology; ³Inst. of Virology, National Research Center for Epidemiology and Microbiology Named after the Honorary Academician N.F. Gamaleya; ⁴Inst. for Bionic Technologies and Engineering, I.M. Sechenov First Moscow State Medical Univ., Russia</i>	576

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SYD-05	Spectroscopic intraoperative diagnostics of tumors during photodynamic therapy <i>K.T. Efendiev^{1,2}, P.M. Alekseeva¹, A.A. Shiryayev³, T.N. Pisareva³, V.B. Loschenov^{1,2}, ¹Prokhorov General Physics Institute RAS; ²National Research Nuclear University "MEPhI"; ³Sechenov First Moscow State Medical University, Russia</i>	578
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SYD-12	Robot-assisted photodynamic therapy <i>T.G. Grishacheva¹, A.S. Vasiliev², A.V. Grabovskiy³, S.A. Nikitin³, V.V. Kharlamov³, N.N. Potraho⁴, A.D. Obomev⁵, N.N. Petrishchev¹, ¹Laser Medicine Center, Pavlov First St. Petersburg State Medical University; ²LLC Renomed; ³LLC Medical Robotics; ⁴Department of Electronic Instruments and Devices, St. Petersburg Electrotechnical University «LETI»; ⁵Department of Thoracic Surgery, St. Petersburg State Research Institute of Phthisiopulmonology, Russia</i>	581
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SYD-15	The dynamic changes in the membranes microviscosity of cancer cells during PDT with photoditazine <i>L.E. Shimolina¹, A.E. Khlynova¹, A.M. Mozherov¹, M.K. Kuimova², M.V. Shirmanova¹, ¹Institute of Experimental Oncology and Biomedical Technologies, Privolzhsky Research Medical University, Russia; ²Department of Chemistry, Imperial College London, United Kingdom</i>	584
SYD-18	Method of deep joint formation at laser welding of biological tissues <i>D.I. Ryabkin^{1,2}, V.V. Suchkova^{1,2}, E.A. Gerasimenko¹, A.Yu. Gerasimenko^{1,2}, ¹Institute of Biomedical Systems, National Research Univ. of Electronic Technology; ²Institute of Bionic Technology and Engineering, Sechenov First Moscow State Medical Univ., Russia</i>	585
SYD-19	Spectral properties of crystalline aluminum phthalocyanine nanoparticles and the possibility of their use in biophotonics <i>V.I. Makarov^{1,2}, D.V. Pominova^{1,2}, A.V. Ryabova^{1,2}, I.D. Romanishkin¹, V.B. Loschenov^{1,2}, ¹Prokhorov General Physics Institute RAS; ²National Research Nuclear University MEPhI, Russia</i>	586
SYD-20	Feasibility of photodynamic effect assessment by means of microcirculation optical monitoring during laser activation <i>A.S. Machikhin¹, A.V. Gunyeva¹, T.G. Grishacheva², N.N. Petrishchev², ¹Acousto-Optic Spectroscopy Lab. STC UI RAS; ²Department of Pathophysiology, Pavlov University, Russia</i>	587

SYD-21	Methylene blue-mediated photodynamic therapy and tissue oxygen saturation control of postoperative mammary gland scars <i>D.M. Kustov¹, P.M. Alekseeva¹, A.S. Moskalev¹, L.Yu. Loschenova², A.V. Voitova², P.V. Pimanchev³, A.A. Shiryayev³, V.B. Loschenov^{1,4}; ¹Prokhorov General Physics Institute RAS; ²Biospec LTD; ³I.M. Sechenov First Moscow State Medical University; ⁴National Research Nuclear University MEPhI, Russia</i>	588
SYD-22	Method for rapid intraoperative analysis of the optical properties of multilayered walls of hollow organs <i>T.A. Savetlieva^{1,2}, A.A. Krivetskaya^{1,2}, V.V. Levkin³, D.M. Kustov¹, A.S. Gorbunov³, A.A. Shiryayev³, S.S. Hamas³, K.G. Linkov¹, V.B. Loschenov^{1,2}; ¹Prokhorov General Physics Institute RAS; ²Institute of Engineering Physics for Biomedicine, National Research Nuclear University MEPhI; ³Department of Faculty Surgery No.1, Sechenov First Moscow State Medical University, Russia</i>	589
SYD-24	The use of mid-infrared lasers in ophthalmology: prospects and advantages, a look at future development <i>Yu.N. Yusef¹, D.V. Petrachkov¹, E.N. Korobov¹, I.M. Belousova², A.P. Zhevlakov², A.S. Narivonchik²; ¹Dept. Innovation Vitreoretinal Technology, Krasnov Research Institute of Eye Diseases; ²Nanophotonics Department, Vavilov Optical Institute, Russia</i>	590
SYD-25	Singlet and triplet oxygen detection by time-correlated single photon counting <i>P. Morozov¹, V.S. Andreev¹, M.V. Shimanova², V.I. Shcheslavskiy^{2,3}, G.N. Goltsman¹; ¹Scontel; ²Privolzhskiy Research Medical University, Russia; ³Becker&Hickl GmbH, Germany</i>	591
SYD-26	The role of water in the biological activity of shungite carbon nanoparticles <i>N.N. Rozhkova¹, S.P. Rozhkov²; ¹Institute of Geology KarRC RAS, ²Institute of Biology KarRC RAS, Russia</i>	592
SYD-27	New materials for photodynamic inactivation of viruses <i>I.M. Belousova¹, I.V. Bagrov¹, V.V. Zarubaev², V.M. Kiselev¹, I.M. Kislyakov³, T.K. Krisko¹, A.M. Starodubtsev¹; ¹Joint Stock Company «Scientific and Production Association S.I. Vavilov State Optical Institute», Russia; ²St. Petersburg Pasteur Research Institute of Epidemiology and Microbiology, Russia; ³Photonic Integrated Circuits Center, Shanghai Institute of Optics and Fine Mechanics CAS, China</i>	593
SYD-28	The combined use of methylene blue and chlorin E6 photosensitizers for photodynamic therapy and correction of the tumor microenvironment <i>D.V. Pominova^{1,2}, A.V. Ryabova^{1,2}, A.S. Skobeltsin^{1,2}, I.V. Markova², I.D. Romanishkin¹; ¹Prokhorov General Physics Institute RAS, ²National Research Nuclear University MEPhI, Russia</i>	594
SYD-30	Spectroscopic verification of contrast enhancement methods in fluorescence diagnostics of basal cell carcinoma with scar tissue <i>A.A. Febenchukova¹, A.M. Udeneev^{1,2}, A.M. Kulichenko^{1,3}, N.A. Kalyagina^{1,3}, K.T. Efendiev^{1,3}, M.V. Loshchenov¹; ¹National Research Nuclear University MEPhI, ²Federal State Budgetary «Federal Scientific and Clinical Center for Medical Rehabilitation and Balneology of the Federal Medical and Biological Agency», ³Prokhorov General Physics Institute RAS, Russia</i>	595
SYD-p01	Comparison of Ce6 photobleaching rate on the surface and in the depth of basaloma during photodynamic therapy at a wavelength of 660 nm using registration of fluorescence excited in the red and violet ranges <i>A.M. Udeneev^{1,2}, A.A. Febenchukova², N.A. Kalyagina^{1,2,3}; ¹Federal State Budgetary «Federal Scientific and Clinical Center for Medical Rehabilitation and Balneology of the Federal Medical and Biological Agency», ²National Research Nuclear University MEPhI, ³Prokhorov General Physics Institute RAS, Russia</i>	596
SYD-p02	Singlet oxygen generation by Radachlorin photosensitizer in albumin-containing solutions <i>D.M. Beltukova¹, V.P. Belik¹, K.A. Chudakov², O.V. Smimov¹, I.V. Semenova¹, O.S. Vasyutinskii¹; ¹Ioffe Inst.; ²Peter the Great Polytechnic Univ., Russia</i>	597
SYD-p03	Study of photo-oxidation of tetrahydrobiopterin with the addition of Pt - Pd nanoparticles <i>D.A. Makarova¹, A.S. Nizamutdinov¹, T.A. Telegina², Yu.L. Vechtomova², A.A. Buglak³; ¹Institute of Physics, Kazan Federal University; ²A.N. Bach Institute of Biochemistry, Research Center of Biotechnology RAS; ³Faculty of Physics, St. Petersburg State University, Russia</i>	598
SYD-p08	Comparison of SERS spectra of intact and inactivated viruses via machine learning algorithms for the viral disease's diagnosis application <i>O. Andreeva¹, D. Danilenko², A. Tabarov¹, K. Grigorenko¹, A. Dobrosavin¹, A. Gorshkov², A. Zheltukhina², N. Gavrilova², A. Gazizulin¹, V. Vitkin¹; ¹ITMO University; ²Smorodintsev Research Institute of Influenza, Russia</i>	599

PD. Postdeadline

PD-01	An enhanced modeling approach for quantum cascade structures and superlattices <i>D.A. Barykin^{1,2,3}, N.A. Kostromin^{1,2,3}, A.S. Dashkov^{1,3}, L.I. Goray^{1,3,4,5}; ¹Alferov University, ²St. Petersburg Polytechnic University, ³St. Petersburg Electrotechnical University, ⁴Institute for Analytical Instrumentation, ⁵University associated with IA EAEC, Russia</i>	600
PD-02	Multi-GHz repetition-rate pulse generation by gain instability in a semiconductor-based all-fiber laser <i>A.V. Ivanenko¹, A.E. Bednyakova¹, S.V. Smimov¹, B.N. Nyushkov²; ¹Novosibirsk State University, ²Novosibirsk State Technical University, Russia</i>	601
PD-05	Kilowatt-class multi-element first cladding fiber laser <i>D.V. Kulakov, A.V. Bochkov, Yu.V. Ivchenko; Federal State Unitary Enterprise «Russian Federal Nuclear Center – All-Russia Research Institute of Technical Physics named after Academician E.I. Zababakhin», Russia</i>	602
PD-06	Quantum electrodynamics cascade arising at reflection of a multipetawatt laser pulse from a solid plasma target <i>M.A. Serebryakov, E.N. Nerush, I.Yu. Kostyukov; Federal Research Center A.V. Gaponov-Grekhov Institute of Applied Physics RAS, Russia</i>	603
PD-09	Laser speckle contrast imaging for intraoperative blood flow monitoring during neurovascular surgery <i>D.D. Stavtsev^{1,2}, A.N. Kononov^{1,3}, F.V. Grebenev^{1,3}, I.O. Kozlov¹, G.A. Piyachenko¹, E.V. Blinova¹, A.Yu. Gerasimenko^{1,2}, D.V. Telyshev^{1,2}; ¹Sechenov Univ., Russia; ²MET, Russia; ³Burdenko Neurosurgical Center, Russia;</i>	604