VI International Conference on Ultrafast Optical Science
«UltrafastLight-2022»

Conference program

October 3—7, 2022
Lebedev Physical Institute, Moscow

AVESTA
LASERS AND OPTICAL SYSTEMS

VI International Conference on Ultrafast Optical Science «UltrafastLight-2022», is the broad-scope, annual international symposium dedicated to the most important aspects of ultrafast phenomena in different fields of natural sciences and engineering.

This year the Conference will commemorate the Centennial anniversary of our colleague Nikolai Basov (born December 14, 1922), outstanding Soviet and Russian physicist and Nobel prize Winner. Working all his scientific life at P. N. Lebedev Physical Institute, Nikolai Gennadievich Basov played important role in the development of world laser physics, as one of the quantum electronics founders and the former LPI director. Most of the topics that are covered by our Conference have benefited from his genius. His detailed biography can be found in the book dedicated to the 95th anniversary of his birth: https://www.lebedev.ru/data/books/Basov.pdf. The second improved edition dedicated to the Centennial anniversary will be published in English in December 2022.

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Chair Nikolay Kolachevsky (Lebedev Physical Institute)
Vice-chair Andrey Ionin (Lebedev Physical Institute)
Vice-chair Sergey Kudryashov (Lebedev Physical Institute)

Monday, October 3

9:00	Registration		
	Plenary session *(Conference hall of QRPD)*		
10:00	*A. Ionin* «Nikolai Basov – Prometheus of the laser era»		
10:15	*S. Chekalin* «High-peak power lasers development at Basov's lab in the last century»		
10:45	*W. Liu* «High energy THz pulse generated by femtosecond laser filamentation»		
11:30	*N. Andreev* «Laser-generated bright sources of high energy particles and γ-rays for interdisciplinary research»		
12:15	Coffee break		
12:45			
13:00	Section 1 «Extreme Light» *(Small hall)* pages 7-8	Section 3 «Ultrafast macro- and nanoscale phenomena in condensed matter» *(Conference hall of QRPD)* page 11	Section 4 «Femtosecond nonlinear optics. Filamentation.High field THz generation» *(Physical hall)* page 13
15:00	Lunch		
16:30	Section 1 «Extreme Light» *(Small hall)* pages 9-10	Section 3 «Ultrafast macro- and nanoscale phenomena in condensed matter» *(Conference hall of QRPD)* page 12	Section 4 «Femtosecond nonlinear optics. Filamentation.High field THz generation» *(Physical hall)* page 14

Tuesday, October 4			
10:00	Registration		
	Plenary session *(Column hall)*		
10:45	*O. Antipov* «High-efficiency repetitively-pulsed 2-um solid-state lasers»		
11:30	*N. Inogamov* «Fast (ps) and slow (ns) laser ablation – from physics to technological applications»		
12:15	*Coffee break*		
13:00	Section 6 «Physics and technology of ultrafast lasers and ultrashort laser pulses» *(Conference hall of QRPD)* page 15	Section 3 «Ultrafast macro- and nanoscale phenomena in condensed matter» *(Column hall)* page 17	Section 4 «Femtosecond nonlinear optics. Filamentation.High field THz generation» *(Small hall)* page 19
15:00	*Lunch*		
16:30	Section 6 «Physics and technology of ultrafast lasers and ultrashort laser pulses» *(Conference hall of QRPD)* page 16	Section 3 «Ultrafast macro- and nanoscale phenomena in condensed matter» *(Column hall)* page 18	

Wednesday, October 5		
9:30	Registration	
	Plenary session *(Column hall)*	
10:00	*N. Rosanov* «Towards extremely short unipolar pulses»	
10:45	*A. Forbes* «Structured Light in Time and Space»	
11:25	*Coffee break*	
12:15	Section 2 «Ultrafast phenomena in ionized gases, semiconductors and metals» *(Small Hall)* pages 20-21	Section 7 «Ultrafast laser technologies and structured light in micro-optics and nanophotonics» *(Conference hall of QRPD)* page 24
14:00	*Lunch*	
15:30	Section 2 «Ultrafast phenomena in ionized gases, semiconductors and metals» *(Small Hall)* pages 22-23	Section 7 «Ultrafast laser technologies and structured light in micro-optics and nanophotonics» *(Conference hall of QRPD)* page 25
17:00 — 19:00	Poster session + coffee break (2nd floor) pages 26—28	

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<tr><td colspan="4">Plenary session
(Column hall)</td></tr>
<tr><td>10:00</td><td colspan="3">N. Minaev «Physical aspects of bioprinting by laser-induced forward transfer method»</td></tr>
<tr><td>10:45</td><td colspan="3">V. Balykin «Ultra-fast light and ultracold matter»</td></tr>
<tr><td>11:25</td><td colspan="3">Coffee break</td></tr>
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<tr><td>12:15</td><td>Section 5 «Frequency combs in spectroscopy and optical clocks»

(Small Hall)
page 29</td><td>Section 8 «Ultrafast laser technologies in biomedicine»

(Column hall)
page 30</td><td>Section 7 «Ultrafast laser technologies and structured light in micro-optics and nanophotonics»

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Section 1 «Extreme Light»

Monday, October 3 / (Small Hall)

Session 12:45—15:35, Chair: Andrey Savel'ev

12:45—13:10
(invited) A. Brantov «Laser acceleration of electrons and ions for the production of medical isotopes and neutrons»

13:10—13:25
I. Tsymbalov «Pointing of laser-accelerated electron beam in plasma with radial density non-uniformity»

13:25—13:40
I. Khairulin «Transformation of a linearly polarized high harmonic radiation into a circularly polarized radiation in neon-like X-ray laser modulated by an IR field»

13:40—13:55
V. Kulagin «Acceleration of electrons in relativistic laser pulse interaction with a nanowire»

13:55—14:20
(invited) K. Burdonov «Commissioning of Apollon facility short focal length area at 1 PW level»

14:20—14:35
D. Gozhev «Micro-scale fusion neutrons from sub-micron heavy water droplet target irradiated by a femtosecond laser pulse of moderate relativistic intensity»

14:35—14:50
M. Veysman « On estimation of energy spectrum of accelerated electron bunches by their synchrotron radiation spectrum»

14:50—15:05
K. Safronov «Enhancement of laser-driven proton acceleration and gamma-ray production due to preplasma on the surface of solid targets»

15.05—15.20
V. Flegentov «Optimization of laser-plasma γ-rays source based on 100 TW femtosecond laser for radiography applications»

15:20—15:35 Flash talks

M. Chaschin «Modification of optical spectra in the process of X-ray generation by laser pulses»
M. Sedov «Numerical study the dependence of the Ly/He and He/Li resonance lines ratios on the intensity of femtosecond laser pulse in gas and cluster targets»
I. Umarov «Charge optimization of electron beam in laser wakefield acceleration taking into account beam loading effect»

Session 16:30—18:45, Chair: Valery Bychenkov

16:30—16:55

(invited) A. Korzhimanov «Role of femtosecond-scale structure of laser driver in wakefield electron acceleration and its betatron»

16:55—17:10

N. Bukharskii «Reconstruction of focal profiles of intense laser pulses via Neural Network-based analysis of angular-energy distributions of accelerated protons»

17:10—17:35

(invited) V. Antonov «Attosecond pulse amplification by IR-field-dressed collisional plasma-based X-ray lasers: the prospects and limitations»

17:35—17:50

O. Kostenko «Simulation of X-ray bremsstrahlung generation under vacuum heating of solid target electrons»

17:50—18:15

(invited) K. Ivanov «Repetitive generation of nC / Joule relativistic electron bunch using 1TW laser pulse and near-critical plasma»

18:15—18:30

T. Semenov «Enhanced high energy electrons and ions production under interaction relativistic laser beam with mixed KrXe clusters»

18:30—18:45

M. Rakitina «Hydrodynamic simulation of target expansion to obtain optimum preplasma for laser triggered ion acceleration»

Session 19:00—20:35, Chair: Sergey Bochkarev

19:00—19:25

(invited) A. Andreev «Generation of sub atto-second scale hard X-ray pulses by Peta-Watt lasers»

19:25—19:40

D. Gorlova «Coherent Transition Radiation in the THz range generated in 1 TW relativistic laser - tape target interaction»

19:40—19:55

E. Starodubtseva «Phase space investigation of electron acceleration in DLA»

19:55—20:10

N. Borisenko «On the anomalous acceleration of electrons from the microheterogeneous targets in the electromagnetic field of the powerful laser pulse»

20:10—20:25

N. Borisenko «Comparative experiments on the irradiation of the solids and of the low-density nanostructured targets with a powerful laser beam in the context of thermonuclear research»

20:25—20:35 Flash talks

D. Alexandrov «Diagnostics of half-cycle unipolar THz pulses of transition radiation by interaction with an electron bunch»
E. Filippov «Characterizing of X-ray source with variable parameters for application in radiography measurements of short-lived hydrodynamic phenomena»

Section 3 «Ultrafast laser technologies and structured light in micro-optics and nanophotonics»

Monday, October 3 / (Conference hall of QRPD)

Session 13:00—15:00, Chair: Sergey Kudryashov

13:00—13:25

(invited) A. Kalashnikova «THz magnetic dynamics in an antiferromagnet CoF2 mediated by optically-induced coherent phonons»

13:25—13:50

(invited) N. Khokhlov «Ultrafast optical excitation of nonlocal magneto-elastic transport in ferrimagnet-gold heterostructure»

13:50—14:15

(invited) S. Kudryashov «Ultrafast transport phenomena in laser-photoexcited materials»

14:15—14:30

I. Martirosyan «Investigation of photoexcited nonequilibrium states in YBCO HTS by femtosecond pump-probe spectroscopy»

14:30—14:45

P. Kartsev «Numerical simulation of femtosecond-pulse induced enhancement of superconductivity»

14:45—15:00

T. Apostolova «Theoretical investigation of high order harmonic generation in semiconductors irradiated by infrared femtosecond laser pulses»

Session 16:30—18:30, Chair: Alexandra Kalashnikova

16:30—16:45

D. Kuntu «Ultrafast laser-induced demagnetization in FeGa/GaAs»

16:45—17:00

P. Gerevenkov «Features of propagation of magnetostatic spin waves induced by ultrafast laser-induced anisotropy change in a waveguide»

17:00—17:15

Ya. Filatov «Spectral features of laser-induced spin waves in thin iron films»

17:15—17:45

(invited) B. Gakovic «Ultrafast laser processing of titanium-silicon thin-film multilayer»

17:45—18:00

E. Kuzmin «Features of structuring and ablation of thin titanium films by femtosecond laser pulses»

18:00—18:15

S. Petrovic «Laser surface texturing of Ti-based multilayers for biomedical application»

18:15—18:30

M. Esmaeili «Effect of parameters of femtosecond laser pulse and characteristics of metal thin film on microjet structure formation threshold»

18:30—18:55 Flash talks

A. Malyavina «Kinetics of nonequilibrium current carriers in the shallow quantum well»

E. Arhipova «Ultrafast laser-induced dynamics of magnetooptical response in thin flakes of van der Waals antiferromagnets NiPS3 and FePS3»

I. Filatov «Influence of nanosecond laser structuring on corrosion resistance of metal alloys»

D. Bezverkhnyaya «Morphology of craters formed by laser nanosecond ablation on silicon substrate»

V. Smirnova «Laser modification of ZnO:Ag properties under different wavelengths»

Section 4 «Femtosecond non-linear optics. filamentation, high field THz generation.»

Monday, October 3 / (Physical hall)

Session 13:00 – 15:05, Chair: Leonid Seleznev

13:00—13:25
(invited) O. Kosareva «Frequency-resolved analysis of Terahertz radiation from a single color DC-biased filament»

13:25—13:50
(invited) I. Babushkin «Universality of THz waveshapes in two-and multi-color plasma-based THz generation»

13:50—14:05
G. Rizaev «Angular distribution of terahertz radiation from single-color filament plasma»

14:05—14:20
I. Nikolaeva «Scaling laws of THz energy produced by two-color mid-infrared femtosecond laser plasmas»

14:20—14:35
S. Sychugin «Terahertz emission from laser-induced strongly magnetized plasma»

14:35—14:50
M. Kurnikov «Terahertz light conversion at a photoionization front in ZnS»

14:50—15:05
S. Bodrov «High-field THz generation with a large-size Si-$LiNbO_3$-quartz structure pumped by a Ti:sapphire amplifier»

Session 16:30 – 18:20 Chair: Olga Kosareva

16:30—16:55

(invited) J. Kasparian «Self-phase modulation, four-wave-mixing, energy conservation, and the sign of n_2»

16:55—17:10

N. Panov «Nonlinear propagation and filamentation on 100-m path of femtosecond beam partitioned by wire mesh»

17:10—17:35

(invited) S. Chekalin «Control of femtosecond filamentation via alignment of gas molecules by SWIR laser pulses»

17:35—17:50

O. Minina «Post-filamentation self-channeling of spatially pre-modulated high-power femtosecond laser pulse»

17:50—18:05

D. Shipilo «3D+time simulations of superfilamentation of multi-mJ pulse in real-experiment geometry»

18:05—18:20

D. Pushkarev «Amplitude and phase masks as tools for frequency-angular structure control of multifilament radiation in air»

Section 6. «Physics and technology of ultrafast lasers and ultrashort laser pulses»

Tuesday, October 4 / (Small Hall)

Session 13:00—14:40, Chair: Igor Kinyaevskiy

13:00—13:25

(invited) V. Kovalev «Interplay of steady-state and transient in nonlinear optical transformations»

13:25—13:40

D. Obydennov «Two-color fs-laser beam shaping with independent wavelength and spatial frequency tuning»

13:40—13:55

A. Koribut «Influence of self-focusing on transient SRS in $BaWO_4$ crystal under self-seeding by self-phase modulation»

13:55—14:10

A. Pyatyshev «Stimulated Raman scattering in polycrystalline mixtures LiOH+LiOD+$Sr(NO_3)_2$ and LiOH+LiOD+Na_2SO_4»

14:10—14:25

N. Semin «Two-photon absorption of 0.3-ps 515-nm laser pulses in $Ca_3(VO_4)_2$ crystal»

14:25—14:40

Minh Hong Pham «Multipass amplifier of ultraviolet and narrowband laser pulses using a Ce:LiCAF crystal»

14:40—14:50 Flash talks

N. Yakushkin «Adaptive control of sub-TW laser beam in mid-IR»
Y. Romanovskii «Characterization of post-compressed ultrashort terawatt laser pulses by SEA-F-SPIDER technique»

Session 16:30—18:55, Chair: Igor Kinyaevskiy

16:30—16:55

(invited) V. Chvykov «Crystal Geometry for High Power Ti:Sa amplifiers of High Repetition Rate Laser Systems»

16:55—17:10

A. Andrianov «Coherent combining of a tiled-aperture square array of femtosecond bell-shaped emitters into a flat-top laser beam»

17:10—17:25

N. Kalinin «Optimization of Kerr squeezing in fibers and its use for sensitivity enhancement of interferometers»

17:25—17:40

A. Sorokin «Simulation of quantum Kerr squeezing in single-channel and multi-channel coherently combined fiber systems»

17:40—17:55

A. Pakhomov «Time-domain integration and differentiation of few- and subcycle pulses in thin conducting films»

17:55—18:10

R. Feshchenko «On the Bessonov integral of electromagnetic field»

18:10—18:25

E. Rakhmanov «Efficiency of excitation of a quantum two-level system by free space ultrashort laser pulse»

18:25—18:40

R. Arkhipov «Generation and Self-Compression of Single-Cycle Light Pulses via Self-Induced Transparency Phenomenon»

18:40—18:55

I. Kinyaevskiy «Optical damage of ZnGeP2 crystal by 1 μm 0.3 ps laser pulse»

Section 3 «Ultrafast phenomena in condensed matter»

Tuesday, October 4 / (Column Hall)

Session 13:00—15:00 Chair: Alexey Kucherik

13:00—13:25

(invited) I. Oladyshkin «Instability of laser pulse reflection as a mechanism of LIPSS formation»

13:25—13:50

(invited) G. Tsibidis «The influence of excited electromagnetic modes and hydrodynamic effects in processing with ultrashort laser pulses»

13:50—14:15

(invited) S. Zabotnov «Femtosecond laser impact on GST225 thin films: LIPSS fabrication and reversible phase transitions»

14:15—14:45

(invited) D. Shuleiko «Femtosecond laser-induced modification of amorphous silicon films: crystallization, ripples formation and anisotropy»

14:45—15:00

A. Kolchin «Anisotropic structures in Ge2Sb2Te5 thin films after femtosecond laser irradiation: experiment and theory»

Session 16:30—18:10, Chair: Stanislav Zabotnov

16:30—16:55

(invited) A. Kucherik «A physico-chemical method for the synthesis of gold nanoparticles by nanosecond laser irradiation»

16:55—17:20

(invited) E. Barmina «Modeling of laser fragmentation of nanoparticles as wave process»

17:20—17:35

K. Khorkov «Femtosecond laser synthesis of ZnS nanoparticles in electrostatic field»

17:35—17:50

A. Chernikov «Femtosecond laser synthesis of molybdenum disulfide nanoparticles in liquid»

17:50—18:10 Flash talks

N. Smirnov «High performance fs/ps laser ablation of silicon and gold»
A. Nastulyavichus «Investigation of the efficiency of laser generation of gold nanoparticles in a liquid»
E. Oparin «Simulation of the formation of clusters from nanoparticles in a colloidal solution»
V. Nesterov «Laser fragmentation of silicon microparticles in water by nano- and picosecond laser pulses»

Section 4 «Femtosecond non-linear optics. filamentation, high field THz generation.»

Tuesday, October 4 / (Physical hall)

Session 13:00 – 15:00, Chair: Sergey Chekalin

13:00—13:15

V. Zvorykin «The role of waveguide propagation and self-focusing of UV laser beam in the formation of high aspect ratio capillary channels in translucent materials»

13:15—13:30

A. Shutov «Can KrCl laser be an actually decent pump source for atmospheric atomic oxygen laser?»

13:30—13:45

I. Zyatikov «Pressure influence on lasing parameters from molecular nitrogen ions in laser plasma»

13:45—14:00

S. Bibicheva «Transformation of the spectra of ultrashort laser pulses passing through a diamond»

14:00—14:15

R. Arkhipov «Self-Stopping of Single-Cycle Light Pulse in a Homogeneous Medium»

14:15—14:30

M. Nazarov «Enhancement of THz and X-ray radiation in thin foils under sub-relativistic irradiation»

14:30—14:45

P. Shcheglov «Different yield of K_α photons with variation of the duration or energy of subrelativistic laser pulses irradiating copper foil»

14:45—15:00 Flash talks

A. Ovchinnikov «Optimization of single-cycle terahertz generation in a OH1 nonlinear organic crystal pumped by a Cr:forsterite laser»
O. Chefonov «Optical second harmonic generation in centrosymmetric antiferromagnet NiO induced by narrowband terahertz pulses»
N. Vrublevskaya «1D quantum model for simulations of generation and propagation of Kerr, Brunel, and Corcum harmonics»

Section 2 «Ultrafast phenomena in ionized gases, semiconductors and metals»

Wednesday, October 5 / (Small Hall)

Session 12:15 – 14:30, Chair: Igor Smetanin

12:15–12:30

V. Krainov «Magneto-plasmons in graphene»

12:30–12:45

I. Smetanin «Plasmonic characteristics of the hybrid Ag/Ag halide nanowires and their prospects for hot electron enhanced photocatalysis»

12:45–13:00

D. Marasanov «Plasmon-driven photocatalysis on hybrid metal-semiconductor Ag-AgBr nanoparticles synthesized in glass matrix via Na+-Ag+ ion exchange»

13:00–13:15

A. Erokhin «Stimulated thermal scattering of picosecond laser pulse in two-photon absorbing nanoparticle colloids»

13:15–13:30

A. Uskov «Effect of Tamm states on Landau damping in plasmonic nanostructures»

13:30–13:45

I. Protsenko «Electron mass discontinuity in surface and volume photoeffect from metal nano-particles»

13:45–14:00

A. Frolov «Excitation of high-intensity terahertz surface waves under action of two-frequency laser radiation»

14:00–14:15

P. Bezrukov «Photocatalytic bleaching of dyes on the surface of nanoporous copper and silver layers»

14:15—14:30 Flash talks

P. Nikiforova «Resonant tunneling of electromagnetic signals in the presence of static magnetic field for mitigation of radiocommunication blackout»
V. Zhukov «An electric field distribution in the focused by high aperture parabolic mirror femtosecond laser pulse»
T. Mamontova «Interaction of radiation with a frequency close to the plasma one with an inhomogeneous plasma formed by multiphoton ionization of inert gas atoms»

Session 15:30 – 18:45, Chair: Alexandr Popov

15:30—15:45

Yi Liu «"Lasing" of nitrogen ions: from superradiance to free induction decay»

15:45—16:00

M. Frolov «Generation of the second harmonic of a XUV pulse by a IR-laser-dressed atom»

16:00—16:15

A. Popov «Polarization and frequency-controlled amplification in a nonequilibrium plasma in the presence of an external magnetic field»

16:15 -16:30

V. Kostin «Polarization effects in terahertz and mid-infrared generation by ultrafast ionizing pulses»

16:30—16:45

A. Bogatskaya «Experimental study of resonant transmission of gigahertz waves through the plasma with supercritical electron density»

16:45—17:00

A. Flegel «Adiabatic expressions for the wave function of electron in a finite-range potential and an intense low-frequency laser pulse»

17:00—17:15

A. Romanov «Detection of mid-IR radiation using the generation of high-order harmonics of laser pulses in gases»

17:15—17:30

A. Silaev «Generation of Brunel harmonics of intense laser pulse in the presence of lower-frequency field»

17:30—17:45

K. Vagin «On collisional electromagnetic instabilities of photoionized in multiphoton regime plasma of inert gas»

17:45—18:00

A. Shirokova «Scattering of an electromagnetic wave at a temporal boundary in an oscillator medium»

18:00–18:15

A. Pakhomov «Ultrafast control of deeply subwavelength spatial gratings in a resonant medium»

18:15–18:30

A. Kolesnikov «Flat-field diffraction grating spectrographs for tender X-ray spectral range»

18:30–18:45

A. Shatokhin «BISER coherent XUV source characterization»

Section 7 «Ultrafast laser technologies and structured light in micro-optics and nanophotonics»

Wednesday, October 5 / (Conference hall of QRPD)

Mini-symposium «Diamond photonics»

Session 12:00—14:30, Chair: Yulia Gulina

12:00—12:40
(invited) S. Stishov «History of diamond synthesis in the USSR»

12:40—13:05
(invited) V. Vins «Postgenetic transformation of atomic defects in CVD-grown diamonds»

13:05—13:30
(invited) M. Kondrin «Temperature dependence of Fano resonance in nanodiamonds synthesized at high temperatures and pressures»

13:30—13:45
A. Eliseev «Effect of irradiation and high temperature annealing without stabilizing pressure on the optical properties of HPHT synthetic diamonds»

13:45—14:00
O. Kovalchuk «Studying the content of major defects in diamonds and their use in predicting diamond deposits»

14:00—14:15
A. Levchenko «Advanced ultrashort-pulse laser micromarking and related tracing of natural diamonds»

14:15—14:30
I. Klepikov «Morphology and internal structure of HPHT synthetic diamond crystals»

Session 15:30—17:40, Chair: Sergey Kudryashov

15:30—15:55

(invited) V. Vins «Generation and annealing of radiation defects in diamonds irradiated with neutrons»

15:55—16:20

(invited) R. Khmelnitsky «Graphitization and combustion of diamond: gemological manifestations and identify»

16:20—16:45

(invited) E. Lipatov «Superluminescence and laser generation on color centers in synthetic diamond»

16:45—17:10

(invited) A. Akimov «Photonic crystal cavities for GeV&SnV diamond»

17:10—17:25

G. Kriulina «Diamonds of Russia: mineralogy and features of the defect-impurity composition»

17:25—17:40

E. Perevedentseva «Nanodiamonds for biomedical applications - features of interaction with blood and behavior in the circulatory system»

Poster session

Wednesday, October 5 / (2nd floor)

Section 1

P01 *M. Chaschin* «Modification of optical spectra in the process of X-ray generation by laser pulses»

P02 *M. Sedov* «Numerical study the dependence of the Ly/He and He/Li resonance lines ratios on the intensity of femtosecond laser pulse in gas and cluster targets»

P03 *I. Umarov* «Charge optimization of electron beam in laser wakefield acceleration taking into account beam loading effect»

P04 *D. Alexandrov* «Diagnostics of half-cycle unipolar Thz EM pulses of transition radiation by interaction with an electron bunch»

P05 *E. Filippov* «Characterizing of X-ray source with variable parameters for application in radiography measurements of short-lived hydrodynamic phenomena»

Section 2

P06 *P. Nikiforova* «Resonant tunneling of electromagnetic signals in the presence of static magnetic field for mitigation of radiocommunication blackout»

P07 *V. Zhukov* «An electric field distribution in the focused by high aperture parabolic mirror femtosecond laser pulse»

P08 *T. Mamontova* «Interaction of radiation with a frequency close to the plasma one with an inhomogeneous plasma formed by multiphoton ionization of inert gas atoms»

Section 3

P09 *A. Malyavina* «Kinetics of nonequilibrium current carriers in the shallow quantum well»

P10 *I. Filatov* «Influence of nanosecond laser structuring on corrosion resistance of metal alloys»

P11 *N. Smirnov* «High performance fs/ps laser ablation of silicon and gold»

P12 *D. Bezverkhnyaya* «Morphology of craters formed by laser nanosecond ablation on silicon substrate «

P13 *V. Smirnova* «Laser modification of ZnO:Ag properties under different wavelengths»

P14 *A. Nastulyavichus* «Investigation of the efficiency of laser generation of gold nanoparticles in a liquid»

P15 *E. Oparin* «Simulation of the formation of clusters from nanoparticles in a colloidal solution»

P16 *E. Arhipova* «Ultrafast laser-induced dynamics of magnetooptical response in thin flakes of van der Waals antiferromagnets NiPS3 and FePS3»

P17 *V. Nesterov* «Laser fragmentation of silicon microparticles in water by nano- and picosecond laser pulses»

Section 4

P18 *A. Ovchinnikov* «Optimization of single-cycle terahertz generation in a OH1 nonlinear organic crystal pumped by a Cr:forsterite laser»

P19 *O. Chefonov* «Optical second harmonic generation in centrosymmetric antiferromagnet NiO induced by narrowband terahertz pulses»

P20 *N. Vrublevskaya* «1D quantum model for simulations of generation and propagation of Kerr, Brunel, and Corcum harmonics»

Section 6

P21 *N. Yakushkin* «Adaptive control of sub-TW laser beam in mid-IR»

P22 *Y. Romanovskii* «Characterization of post-compressed ultrashort terawatt laser pulses by SEA-F-SPIDER technique»

Section 7

P23 *N. Smirnov* «Transport of electron-hole plasma in diamond at pico-subpicosecond times»

P24 *S. Ostrikov* «Transformations of the Spectrum of an Optical Phonon Excited in Raman Scattering in the Bulk of Diamond by Ultrashort Laser Pulses with a Variable Duration»

P25 *N. Smirnov* «Solid immersion based on ZnSe for visualization of defects inside diamonds»

P26 *P. Pakholchuk* «Analysis of the intensity distribution in a laser beam focused in bulk of diamond using Zemax»

P27 *N. Busleev* «Annealing of ultrafast laser written birefringent structures in fused silica»

P28 *A. Shishkina* «Investigation of hollow channels formation in silicate materials»

P29 *C. Li* «Direct laser writing of color reflective pixels inside optical material»

P30 *Ya. Alsaif* «Ultrafast laser waveguide writing inside glass by structured beam»

P31 *V. Yakimuk* «Femtosecond laser writing of bulk waveguides in porous silicate matrix»

P32 *Yu. Yandybaeva* «The switchable circular dichroism of gold nanoparticles incorporated into nanoporous silicate matrices»

Section 8

P33 *D. Zayarnyi* «Antibacterial properties of electroactive nanostructured metal films»

P34 *I. Sozaev* «Laser surface modification of Ti-Ni»

P35 *P. Shakhov* «Synthesis of titanium nitride nanoparticles in various media and study of their optical spectra and size distribution»

P36 *S. Shelygina* «Inactivation of pathogenic bacteria by mid-IR radiation»

P37 *A. Nastulyavichus* «Inactivation of mixed biofilms of foodborne pathogens with nanoparticles»

P38 *I. Cojocaru* «Microscale precise thermometry»

Section 5 «Frequency combs in spectroscopy and optical clocks»

Thursday, October 6 / (Small Hall)

Session 13:00—15:05, Chair: Dmitry Tregubov

13:00—13:25

(invited) S. Leonov «Comb tooth linewidth in Cr:ZnSe-based frequency combs»

13:25—13:40

V. Smirnov «Laser system with servo-noise filtration for optical qubit manipulation»

13:40—14:05

(invited) K. Kudeyarov «Ultrastable optical frequency transfer for precision spectroscopy «

14:05—14:20

D. Mishin «Compact experimental setup for optical clock on thulium atoms»

14:20—14:35

M. Yaushev «Optical pumping optimisation using machine learning methods»

14:35—14:50

D. Tregubov «Development of experimental setup for implantation and spectroscopy of thulium atoms in noble gas crystals»

14:50—15:05

M. Marisova «Spectral characteristics of two coupled microresonators»

Section 8 «Ultrafast laser technologies in biomedicine»

Thursday, October 6 / (Column hall)

Session 13:00—14:20, Chair: Sergey Gonchukov, Eteri Tolordava

13:00—13:25

(invited) J. Xu «Ultrafast laser fabrication of multifunctional glass microfluidic chips»

13:25—13:50

(invited) M. Ansari «Methods of optical imaging using ultrashort pulse lasers»

13:50—14:05

E. Rimskaya «Development of new non-invasive laser diagnostic methods for *skin tumors*»

14:05—14:20

I. Saraeva «Electroactive nanostructured antibacterial materials»

Section 7 «Ultrafast laser technologies and structured light in micro-optics and nanophotonics»

Thursday, October 6 / (Conference hall of QRPD)

Session 12:15—14:00, Chair: Mikhail Smayev

12:15—12:40

(invited) Ya Cheng «Integrated active lithium niobate photonic devices»

12:40—12:55

P. Danilov «Tunable diffractive optical elements based on lithium niobate»

12:55—13:20

(invited) S. Syubaev «Structural coloring and anti-counterfeiting enabled by direct femtosecond laser printing»

13:20—13:45

(invited) S. Fedotov «Femtosecond laser-assisted nanostructuring of nanoporous glass: from anisotropic cavities to nanogratings»

13:45—14:00

K. Lvov «Improved model for conduction band dynamics under mid-IR femtosecond excitation of crystals»

14:00—14:15

A. Rupasov «Laser generation of periodic nanostructures in the bulk and on the surface of dielectrics»

Session 15:30—17:25, Chair: Sergey Lotarev

15:30—15:45

E. Anashkina «Thermo-optical control of light wavelength conversion in soft glass microresonators»

15:45—16:00

M. Smayev «Binary Gratings Produced on a $Ge_2Sb_2Te_5$ Film by Ultrashort Laser Pulse»

16:00—16:15

A. Patrikeeva «Investigation of the Laser Action Photothermal Mechanism on PbSe Chalcogenide Films»

16:15—16:30

S. Fedotov «Femtosecond laser welding of glass and glass-ceramics»

16:30—16:45

T. Lipateva «Chemical polishing of microchannels inside silica glass for microfluidic applications»

16:45—17:00

A. Bazhenov «Hight temperature superradiant phase transition in microstructures with network architectures»

17:00—17:25 Flash talks

A. Shishkina «Investigation of hollow channels formation in silicate materials»
C. Li «Direct laser writing of color reflective pixels inside optical material»
Ya. Alsaif «Ultrafast laser waveguide writing inside glass by structured beam»
V. Yakimuk «Femtosecond laser writing of bulk waveguides in porous silicate matrix»
Yu. Yandybaeva «The switchable circular dichroism of gold nanoparticles incorporated into nanoporous silicate matrices»

Section 7 «Ultrafast laser technologies and structured light in micro-optics and nanophotonics»

Friday, October 7 / (Column hall)

Mini-symposium «Diamond photonics»

Session 10:00—12:50, Chair: Sergey Kudryashov/Pavel Danilov

10:00—10:15

P. Danilov «Spectroscopy of laser-bleached microstructures created in HPHT-diamond by the femtosecond laser pulses»

10:15—10:30

E. Kuzmin «Pulsewidth-dependent filamentation of ultrashort laser pulses in bulk dielectrics»

10:30—10:45

J. Chen «Structural transformation of nitrogen-containing color centers in diamond under ultrafast laser irradiation»

10:45—11:00

Yu. Gulina «Optimal mid-IR light ray tracing schemes inside rough and polished diamonds for highly-sensitive transmission measurements of nitrogen content»

11:00—11:15

G. Krasin «Polarization-dependent effects of femtosecond laser pulses interaction in crystalline dielectrics»

11:15—11:30

M. Kovalev «Characterization of dielectrics surface using transport-of-intensity equation»

11:30—11:45

S. Kudryashov «Laser-driven point-defect organization in dielectrics: basic phenomena and implications»

11:45—12:00

A. Romshin «Tunable temperature sensor based on luminescent diamond particle»

12:00—12:15

D Pasternak «Linewidth of individual SiV centers in CVD nanocrystals as a function of their size and temperature »

12:15—12:30

P. Pakholchuk «Analysis of the intensity distribution in a laser beam focused in bulk of diamond using Zemax»

12:30—12:50 Flash talks

N. Smirnov «Transport of electron-hole plasma in diamond at pico-subpicosecond times»
S. Ostrikov «Transformations of the Spectrum of an Optical Phonon Excited in Raman Scattering in the Bulk of Diamond by Ultrashort Laser Pulses with a Variable Duration»
N. Smirnov «Solid immersion based on ZnSe for visualization of defects inside diamonds»
P. Pakholchuk «Analysis of the intensity distribution in a laser beam focused in bulk of diamond using Zemax»

For notes

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