



IX International Conference on Ultrafast Optical Science
«UltrafastLight-2025»

Conference program

September 29—October 2, 2025
Lebedev Institute, Moscow



IX International Conference on Ultrafast Optical Science «UltrafastLight-2025», is the broad-scope, annual international symposium dedicated to the most important aspects of ultrafast phenomena in different fields of natural sciences and engineering.

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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, September 29

9:00	Registration		
	Plenary session (Column hall)		
09:30	Conference opening		
09:45	S. Popruzhenko A. Kuznetsov «Multi-KJ glass laser facility "ELF": conceptual design and high density energy research program»		
10:30	V. Strelkov «Resonant high-order harmonic generation and attosecond pulses production in intense laser field»		
11:15	Lunch		
12:00	Section 1 «Extreme Light» (Small hall) page 7	Section 3 «Ultrafast laser technologies in micro-optics, nanophotonics, integrated optics and optoelectronics» (Column hall) pages 9-10	Section 5 «Ultrafast optical technologies and nonlinear optical phenomena» (Conference hall of QRPD) pages 12-13
15:30	Coffee break		
16:00	Section 1 «Extreme Light» (Small hall) page 8	Section 3 «Ultrafast laser technologies in micro-optics, nanophotonics, integrated optics and optoelectronics» (Column hall) page 11	Section 5 «Ultrafast optical technologies and nonlinear optical phenomena» (Conference hall of QRPD) pages 14-15

Tuesday, September 30

09:15	Registration		
	<i>Plenary session (Column hall)</i>		
09:45	A. Fedotov «Phase stable single-cycle pulses: generation, characterisation and applications»		
10:30	H. Tian «Domain engineering and ultrafast dynamics in optoelectronic functional materials»		
11:15	<i>Lunch</i>		
12:00	<p>Section 1 «Extreme Light»</p> <p style="text-align: center;"><i>(Conference hall of QRPD)</i></p> <p style="text-align: center;">pages 16-17</p>	<p>Section 2 «Ultrafast phenomena in ionized gases, semiconductors and metals»</p> <p style="text-align: center;"><i>(Small hall)</i></p> <p style="text-align: center;">page 19</p>	<p>Section 3 «Ultrafast laser technologies in micro-optics, nanophotonics, integrated optics and optoelectronics»</p> <p style="text-align: center;"><i>(Column hall)</i></p> <p style="text-align: center;">page 21</p>
15:30	<i>Coffee break</i>		
16:00	<p>Section 1 «Extreme Light»</p> <p style="text-align: center;"><i>(Conference hall of QRPD)</i></p> <p style="text-align: center;">page 18</p>	<p>Section 2 «Ultrafast phenomena in ionized gases, semiconductors and metals»</p> <p style="text-align: center;"><i>(Small hall)</i></p> <p style="text-align: center;">page 20</p>	<p>Section 3 «Ultrafast laser technologies in micro-optics, nanophotonics, integrated optics and optoelectronics»</p> <p style="text-align: center;"><i>(Column hall)</i></p> <p style="text-align: center;">page 22</p>

Wednesday, October 1

09:30	Registration		
	<i>Plenary session (Column hall)</i>		
09:45	A. Fedyanin «Dielectric photonic metasurfaces for analog optical image processing and neuromorphic photonic applications»		
10:30	N. Evtikhiev «Modern laser technology for medical application»		
11:15	<i>Lunch</i>		
12:00	<p>Section 2 «Ultrafast phenomena in ionized gases, semiconductor s and metals» <i>(Small hall)</i></p> <p style="text-align: right;">page 23</p>	<p>Section 3 «Ultrafast laser technologies in micro-optics, nanophotonics, integrated optics and optoelectronics» <i>(Column hall)</i></p> <p style="text-align: right;">page 25</p>	<p>Section 6 «Ultrafast laser technologies in biomedicine» <i>(Conference hall of QRPD)</i></p> <p style="text-align: right;">pages 27-28</p>
15:30	<i>Coffee break</i>		
16:00	<p>Section 2 «Ultrafast phenomena in ionized gases, semiconductor s and metals» <i>(Small hall)</i></p> <p style="text-align: right;">page 24</p>	<p>Section 3 «Ultrafast laser technologies in micro-optics, nanophotonics, integrated optics and optoelectronics» <i>(Column hall)</i></p> <p style="text-align: right;">page 26</p>	<p>Section 6 «Ultrafast laser technologies in biomedicine» <i>(Conference hall of QRPD)</i></p> <p style="text-align: right;">page 29</p>

Thursday, October 2

09:30	Registration
	<i>Plenary session (Column hall)</i>
10:00	E. Andrianov O. Tolstikhin «Formation of nonclassical and non-Gaussian states of a strong electromagnetic field due to its interaction with free electrons produced by ionization of a target gas»
10:45	Conference closing
11:00	<i>Lunch</i>
12:00 — 14:00	Poster session + coffee break pages 30—32 (2 nd floor)

Section 1 «Extreme light»

Monday, September 29 / (Small hall)

Session 12:00—14:50

Chair: V. Bychenkov

12:00—12:25

(invited) Y. Leng «Ultra-intense and ultra-short laser and its applications»

12:25—12:50

(invited) N.E. Andreev «Secondary sources of radiation and high-energy particles under interaction of femto- and subpicosecond laser pulses with near-critical plasma targets»

12:50—13:15

(invited) M. Nazarov «Relativistic electron acceleration with oxygen small clusters»

13:15—13:40

(invited) A. Korzhimanov «Efficient generation of few-cycle mid-infrared pulses by Doppler shifting of ultraintense laser pulses reflected from near-critical-density targets»

13:40—13:55

V. Kulagin «Producing X-ray and gamma-ray pulses in the Compton backscattering mode using multi-petawatt lasers and plasma films»

13:55—14:10

M. Veysman «On the optimization of bremsstrahlung gamma-quanta generated by high-current relativistic electron beams»

14:10—14:25

D. Bulanov «System of elliptical plasma mirrors in the dipole focusing scheme»

14:25—14:50

(invited) A.A. Andreev «Enhancement of atto-pulses generated by relativistic laser beams in inhomogeneous over-dense plasma»

Session 16:00—18:20

Chair: Andrey Brantov

16:00—16:25

(invited) J. Shao «Optics for compressors and post compression in petawatt lasers: challenges and solutions»

16:25—16:40

M. Chaschin «Generation of powerful terahertz radiation during relativistic laser acceleration of electrons in a gas-cluster target»

16:40—17:05

(invited) I. Tsymbalov «Generation of collimated quasi-monoenergetic electron beams on a terawatt laser system»

17:05—17:20

M. Lobok «Laser-activated gamma emission analysis»

17:20—17:35

E. Starodubtseva «Laser-plasma electron acceleration diagnostics via second harmonic radiation from the plasma channel sheath»

17:35—17:50

Y. Romanovskii «Generation of MeV-level multicharged ions from Kr clusters under irradiation with relativistic laser pulses»

17:50—18:05

S. Bondarenko «Fano resonance in high harmonic generation by intense laser pulses and its classical analogy»

18:05—18:20

M. Mozhaeva «The influence of the near-surface environment on the X-ray flux when creating a microfocus x-ray source using technological femtosecond lasers»

Section 3 «Ultrafast laser technologies in micro-optics, nanophotonics, integrated optics and optoelectronics»

Monday, September 29 / (Column hall)

Session 12:00—15:40 Chair: Sergey Kudryashov

12:00—12:25

(invited) V. Akimov «Sensors based on color center in diamond»

12:25—12:50

(invited) V. Kononenko «Single NV⁻ centers in diamond produced by low-intensity laser pulses»

12:50—13:15

(invited) P. Danilov «Ultrafast non-linear photophysics of optical centers in diamond»

13:15—13:30

G. Krasin «Polarization effects in nonlinear optical interaction of ultrashort laser pulses with diamonds»

13:30—13:55

(invited) A. Zelenina «Atomistic simulation of nitrogen defects in diamond with machine learning potential»

13:55—14:20

(invited) E. Vasilev «Conjugacy of C and NV centers in natural and synthetic diamond»

14:20—14:45

(invited) V. Popov «ODMR spectroscopy OF NV⁻ color centers in diamond nanostructures»

14:45—15:10

(invited) A. Shiryayev «Extended defects in natural diamonds with Y-defects in IR absorption spectra»

15:10—15:25

D. Pomazkin «Photo-physical characteristics of N3-center in diamond»

12:00—12:25

(invited) V. Akimov «Sensors based on color center in diamond»

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13:10—13:35

(invited) V. Popov «ODMR spectroscopy OF NV⁻ color centers in diamond nanostructures»

13:35—14:00

(invited) V. Lebedev «Features of narrow-band stimulated emission in NV⁻, C: HPHT diamond»

14:00—14:25

(invited) E. Zaloznaya «NV diamond megawatt laser for shadow recording of fast processes»

14:25—14:50

(invited) E. Vasilev «Conjugacy of C and NV centers in natural and synthetic diamond»

14:50—15:05

T. Misnikova «The impact of post-growth processing on the spectral-temporal characteristics of stimulated emission in NV⁻, C: HPHT-diamond»

15:05—15:20

A. Savvin «Fast photoconductivity of diamond NV⁰ center»

15:20—15:40

(invited) A. Zelenina «Atomistic simulation of nitrogen defects in diamond with machine learning potential»

Session 16:00—18:50, Chair: Sergey Kudryashov

16:00—16:25 (invited) A. Shiryayev «Extended defects in natural diamonds with Y-defects in IR absorption spectra»

16:25—16:50 (invited) V. Vins «Optical - spectral and some photoelectric properties of synthetic diamonds irradiated with neutrons»

16:50—17:15

(invited) A. Barannikov «X-ray diffraction properties of diamonds irradiated by electrons and neutrons»

17:15—17:40

(invited) A. Inyushkin «How annealing restores thermal conductivity of electron-irradiated diamond»

17:40—18:05

(invited) S. Buga «Energy of Tamm surface states in 2-10 nm nanodiamonds»

18:05—18:20

G. Krasin «Polarization effects in nonlinear optical interaction of ultrashort laser pulses with diamonds»

18:20—18:35

D. Pomazkin «Photo-physical characteristics of N3-center in diamond»

18:35—18:50

P. Pakholchuk «Femtosecond infrared bulk micromarking of diamond through a Ge₇Se₉₃ solid-state immersion layer»

Section 5 «Ultrafast optical technologies and nonlinear optical phenomena»

Monday / (Conference hall of QRPD)

Session 12:00 – 14:35, Chair: Igor Kinyaevskiy

12:00—12:25

(invited) Li Li «Ultrafast mode-locked fiber lasers for generation of infrared pulse sources »

12:25—12:50

(invited) V. Chvykov « Approaches to Overcoming Energy Limitations in Post-Compression Techniques»

12:50—13:05

V. Zhukov «The estimation of multiphoton ionization coefficient for fused silica for 400 nm wavelength»

13:05—13:20

E. Parkevich « Laser diffraction imaging of fine-scale plasma formations to retrieve their properties»

13:20—13:35

K. Kungurov «Robust, stable and repetition rate tunable Yb-doped fiber CPA for a soliton solid-state laser »

13:35—13:50

N. Kostyukova «Widely tunable in the mid-IR BaGa₂GeS₆ optical parametric oscillator»

13:50—14:05

D. Suleimanova «Generation of narrowband terahertz radiation in novel quaternary BaGa₂GeS₆ and BaGa₂GeSe₆ crystals»

14:05—14:20

M. Ionin «Generation of femtosecond pulses within wavelength range from 5.2 to 10 μm with BaGa₂GeS₆ nonlinear crystal»

14:20—14:35

A. Koribut «Angular intensity distribution of a femtosecond mid-IR laser pulse obtained by difference frequency generation in a nonlinear crystal»

Session 16:00 – 19:50

Chair: Fedor Potemkin

16:00—16:25

(invited) L. Seleznev «Terahertz source based on single-color laser filamentation»

16:25—16:40

A. Bulygin «Effect of chirping of femtosecond laser radiation on its spectral characteristics during filamentation in compressed gas»

16:40—16:55

S. Bodrov «Graphene visualization using optically- and terahertz-induced luminescence»

16:55—17:10

Y. Gulina «Experimental study of nonlinear optical interaction of femtosecond laser pulses with PMMA»

17:10—17:25

T. Dolgova «Terahertz pulse shape modification by photoinduced charges in GaAs»

17:25—17:40

Y. Sinichkina «Peculiarities of electro-optical control in a multi-gigahertz chaos generator»

17:40—17:55

A. Pushkin «Non-stationary processes in a polyatomic gas under mid-IR ultrafast laser excitation »

17:55—18:10

A. Shugurov «Multicycle terahertz generation by nonlinear mixing of o- and e-waves in lithium niobate»

18:10—18:25

N. Zhidovtsev «Second harmonic generation in direct-bandgap semiconductor assisted by intense THz field achieved in DAST with Cr:Forsterite»

18:25—18:40

A. Romashova «Investigation of the AC Stark effect in CdSe semiconductor nanoplatelets»

18:40—18:55

V. Kovalev «Barium tungstate crystal – a unique medium for high efficiency SRS of ultrashort laser pulses»

18:55—19:10

S. Pershin «Synchronously pumped picosecond Raman laser in water with phase-conjugation instead of mirror»

19:10—19:25

K. Emelyanov «Diode pumped 100 kHz femtosecond Ti:sapphire chirped pulse amplifier»

19:25—19:50 Flash Talks

O. Minina «Filamentation multifocal structure during propagation of high-power femtosecond laser pulses in pressured gases»

K. Shpakov «An algorithm for processing interferograms using pathfinding and its application in the analysis of electric spark plasma»

A. Ovchinnikov «An experimental investigation of the optical properties of thin metal films under the influence of high-intensity THz pulses»

P. Veliev «Liquid SF₆ as possible medium for SBS compression of 248-nm KrF laser pulses into subnanosecond range»

J. Zhu «Study of nonlinear optical properties in PDMS under femtosecond laser pulse interaction»

Section 1 «Extreme Light»

Tuesday, September 30 / (Conference hall of QRPD)

Session 12:00—14:40, Chair: Andrei Brantov

12:00—12:25

(invited) V. Kovalev «Matching conditions for relativistic self-trapping of a laser beam»

12:25—12:40

P. Korneev «On collisionless dissipation of a relativistic discharge pulse»

12:40—12:55

E. Dmitriev «Interaction of charged particles with a structured orbital angular momentum light beam»

12:55—13:10

A. Samsonov «Extending Monte-Carlo simulation of QED effects to account for leptons spin and photons polarization»

13:10—13:25

M. Malakhov «Modeling the Thomson scattering spectrum in realistic laser–electron beam collisions»

13:25—13:40

N. Bukharskii «Multi-MeV proton beam collimation using strong magnetic fields excited by ultrashort relativistic laser pulses»

13:40—13:55

M. Serebryakov «QED cascade arising at reflection of a multipetawatt laser pulse from a self-organized plasma mirror»

13:55—14:10

S. Bochkarev «Generation of bremsstrahlung X-rays in a microcluster target irradiated by an ultrashort duration laser pulse»

14:10—14:25

M. Sedov «Features of the distribution of highly charged ions when irradiating metal foils with ultra-relativistic femtosecond laser pulse»

14:25—14:40

D. Gimaletdinova «Modeling of electron acceleration processes in dense plasma with a petawatt power laser driver»

Session 16:00—18:30,

Chair: Sergey Bochkarev

16:00—16:25

(invited) *N. Borisenko* «Laser targets' stimulating role in the laser and particle beams interaction with matter»

16:25—16:40

S. von Gratoski «The nano-fuzz low-density laser targets and spontaneous emergence of nanograss in some physical processes»

16:40—16:55

R. Feshchenko «Non-linear effects in laser-electron sources and their numerical simulation»

16:55—17:10

M. Rakitina «Preplasma formation and ion acceleration from ultrathin foils

17:10—17:25

D. Iankhotov «Propagation of a monoenergetic beam of relativistic electrons in vacuum»

17:25—17:40

A. Castillo Ramirez «Efficient laser-based particle acceleration in the “bullet” and “bubble” regimes using J-class ultrashort pulses»

17:40—17:55

Z. Mohammadzahery «Comparative study of intra-cavity and external dispersion compensation in a SESAM mode-locked Ti:Sapphire oscillator»

17:55—18:30 *Flash talks*

I. Metelskii «Spherically collapsing dipole wave theory»

S. Perevalov «Refocusing high-power fs-pulses using cone-shaped curved channels»

A. Samsonov « Investigation of THz radiation generated from interaction of relativistic laser pulse with pre-ablated thin-layer liquid jet target»

O. Sviridova «Role of polarization in femtosecond laser-plasma driven electron acceleration»

A. Tausenev «Influence of a single-cycle, strong THz pulse on a bunch of relativistic electrons»

I. Umarov «Energy spread of a finite charge electron bunch in LWFA»

M. Zakharchuk «Ablation and surface structuring of copper plates using single pulses of different duration of Nd:glass lasers»

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

Tuesday, September 30 / (Small hall)

Session 12:00—14:55, Chair: V. Kostin

12:00—12:25

(invited) R. Arkhipov «Unipolar Light Pulses: Fundamental Advances and Applications»

12:25—12:40

R. Arkhipov «Generation of Unipolar Half-cycle Light Pulses in Ionized Plasma Layers»

12:40—13:05

(invited) A. Silaev «Frequency-resolved optical gating using ionization multiwave mixing for measuring terahertz and mid-infrared pulses»

13:05—13:20

A. Romanov «Propagation effects in detection of terahertz pulses using Brunel harmonics generation»

13:20—13:35

(invited) A. Frolov «Time delay of laser pulse at its reflection from boundary of supercritical plasma»

13:35—13:50

M. Rozhko «High-harmonic probe of the plasma density gradient build-up induced by femtosecond mid-infrared laser pulses»

13:50—14:15

(invited) V. Kostin «Strong boost in terahertz generation with ionizing three-color pulses from mid- and near-infrared pumps»

14:15—14:40

(invited) I. Khairulin «Petahertz-bandwidth amplified spontaneous emission of an optically modulated collisional plasma-based x-ray laser»

14:40—14:55

P. Shulyndin «Coherent control of a high harmonic spectrum by a synthesized near-IR and mid-IR laser field»

Session 16:00—18:50, Chair: I. Smetanin

16:00—16:25

(invited) *A. Bogatskaya* «On the possibility of controlling the process of laser microstructuring in fused silica in the presence of reflecting materials»

16:25—16:50

(invited) *I. Smetanin* «2D quantum well with excited THz plasma density oscillations as analog of the Photonic Time Crystal»

16:50—17:05

E. Astashkin «PIC modelling of plasma gradient formation and electron kinetics on the surface of the solid target»

17:05—17:20

I. Oladyshkin «On a possible mechanism of structuring semiconductors in strong THz field»

17:20—17:35

V. Grishkov «Terahertz radiation generation in doped n-GaAs placed in magnetic field»

17:35—17:50

M. Andreeva «Influence of intense THz dressing field on the harmonic generation in semiconductors»

17:50—18:05

E. Danilov «Laser sound generation in a homogeneously heated metal film»

18:05-18:20

N. Zhestkij «Nonlinear frequency conversion in metal-organic frameworks single microcrystals»

18:20-18:35

R. Ikhsanov «Effects of Tamm state on bulk electron photoemission in metal-semiconductor nanostructures»

18:35-18:50

M. Popova «RABBITT setup with missing harmonics»

Section 3 «Ultrafast laser technologies in micro-optics, nanophotonics, integrated optics and optoelectronics»

Tuesday, September 30 / (Column hall)

Session 12:00—15:20, Chair: Hao Tian

12:00—12:25

(invited) X. Liu «Multi-dimensional manipulation of chiroptical responses by meta-structures»

12:25—12:50

(invited) Y. Wang «Tunable functional materials and devices in terahertz band»

12:50—13:15

(invited) N. Niu «Control and application of soliton microcombs»

13:15—13:40

(invited) C. Hu «Domain Engineering in KNN Single Crystals: A Strategy for Polarization Orientation Optimization»

13:40—14:05

(invited) X. Meng «Domain evolution and properties in KN-based single crystals»

14:05—14:30

(invited) N. Petrov «*Probing vector fields for ultrafast material interactions by polarization holographic microscopy*»

14:30—14:55

(invited) V. R. Soma «Novel ultrafast laser-based fabrication techniques for trace analyte detection using SERS»

14:55—15:20

(invited) A. Fotiadi «Double harmonic mode-locking in soliton fiber lasers»

Session 16:00—18:20,

Chair: Michael Kovalev

16:00—16:25

(invited) O. Butov «Twisted fiber Bragg grating as a polarization insensitive element»

16:25—16:40

D. Przhiialkovskii «Formation features and annealing dynamics of fiber Bragg gratings inscribed with femtosecond laser radiation»

16:40—16:55

E. Dolzhenko «Features of fiber Bragg gratings formed with femtosecond pulsed laser radiation»

16:55—17:10

A. Sosunov «APE waveguides in mixed lithium niobate-tantalate solid solutions: defect structure and optical properties»

17:10—17:25

A. Rupasov «Color centers NBOHC in birefringent microtracks induced by laser radiation in the bulk of fused silica»

17:25—17:40

I. Ermolaev «Laser methods of information recording in perovskite materials»

17:40—18:05

(invited) M. Smayev «Periodic structures on thin telluride films induced by femtosecond laser pulses»

18:05—18:20

P. Smirnov «Laser-induced amorphization of thin phase-change films»

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

Wednesday, October 1 / (Small hall)

Session 12:00 — 13:55, Chair: A. Popov

12:00—12:25

(invited) J. Yao «Dynamic characteristics and formation mechanism of the complex dynamics in subnormal glow discharge systems: Mixed-mode oscillations and period-adding bifurcation»

12:25—12:50

(invited) A. Mitrofanov «Above-threshold ionization in the presence of a single-cycle terahertz pulse»

12:50—13:15

(invited) V. Antonov «High harmonic generation under the conditions of multiphoton atomic excitation by a strong short-wave laser field»

13:15—13:30

I. Khairulin «Attosecond bursts generation via multiphoton interaction of intense short-wave laser field with helium atoms»

13:30—13:55

(invited) S. Kozlov «Decay of a video pulse into traveling and evanescent waves»

Session 16:00—17:35, Chair: A. Popov

[16:00—16:15](#)

S. Pershin «New 3 ns AlGaAs injection laser with 50 ps prepulse»

[16:15—16:30](#)

S. Kuznetsov «Sagdeev's ion-acoustic soliton in the kinetic description of the electron component of a collisionless non-isothermal plasma»

[16:30—16:45](#)

N. Obydenov «Time-resolved X-ray diffraction analysis of laser-induced piezo-photovoltaic effect in iron doped lithium niobate»

[16:45—17:00](#)

V. Krainov «Calculation of neutron yields at the initiation of the photo-nuclear reaction ${}^9\text{Be}(\gamma, n)2\alpha$ by the intense laser light»

[17:00—17:35](#) Flash talks

T. Mamontova «Photoionized plasma layer in a magnetic field as a medium for radiation amplification»

A. Krupin «Resonant effects in high-harmonic generation during ionization in the intermediate regime between multiphoton and tunneling»

A. Grachkov «Monte-Carlo inelastic electron transport using dielectric function»

F. Shuklin «Opto-magnonic photonic time crystal»

E. Struleva «Single-pulse ablation of Ni nanoscale films on silicon substrates by femtosecond laser irradiation»

P. Komarov «Dynamics of movement of a spalling plate for films of various thicknesses during femtosecond heating»

V. Filatov «Symmetry of Polariton Field in a Crystalline Medium»

Section 3 «Ultrafast laser technologies in micro-optics, nanophotonics, integrated optics and optoelectronics»

Wednesday, October 1 / (Column hall)

Session 12:00—15:20, Chair George Krasin

12:00—12:25

(invited) N. Dmitriev «Domestic low loss silicon nitride (Si₃N₄) integrated platform for nonlinear»

12:25—12:50

(invited) M. Kovalev «Influence of pulsed laser processing parameters on the photoresponse kinetics and electrical characteristics of hyperdoped silicon wafers»

12:50—13:15

(invited) S. Kudryashov «Non-contact THz and Raman probe acquisition of structural and electrical properties in hyperdoped silicon»

13:15—13:30

I. Podlesnykh «Electrical and optical characterisation of gold-hyperdoped silicon after pulsed laser annealing»

13:30—13:45

N. Smirnov «Nonlinear optical properties of silicon in the mid-IR range (3-6 μm)»

13:45—14:00

A. Gorevoy «Surface swelling of undoped polymethylmetacrylate by mid-infrared ultrashort laser pulses»

14:00—14:15

V. Shahnazaryan «Deeply Subwavelength blue-range perovskite nanolaser»

14:15—14:40

(invited) O. Sokolovskaya «Nonlinear response of CdSe/ZnS quantum dots embedded in liquid crystal-based matrix under phase transition»

14:40—15:05

(invited) V. Gruzdev «Few-cycle femtosecond laser-nanostructure interactions: from phase detection to PHz electronics»

15:05—15:20

D. Derimedved «Laser processing of ferroelectric polymer films by nanosecond and femtosecond laser pulses»

16:00—16:40 Flash talks

N. Dolzhenko «Pulsed laser melting of co-deposited silicon-gold layer»

S.Gavrilov «Simulation of plasma interferometry of a cathode spot at a wavelength of 532nm»

D. Obydenov «C-band broadband emitter integrated on a silicon nitride photonic chip via luminescent particle embedding»

A. Mumlyakov «PECVD-synthesized silicon nitride waveguides for nonlinear optical integrated devices»

A. Rykov «Single-mode beveled fiber matching device with planar waveguides by 2PP method»

N. Busleev «Self-organization of surface structures and amorphization of crystalline silicon via infrared femtosecond laser pulses»

E. Mavreshko «Study of thresholds of laser ablation of porous silicon in air and liquid media»

A. Uspenskiy «Numerical model for ultrafast optical switching based on half-space non-radiating modes»

Section 6 «Ultrafast laser technologies in biomedicine»

Wednesday October 1/ (Conference hall of QRPD)

Session 12:00 – 14:40, Chair: S. Gonchukov

12:00—12:25

(invited) A. Sviridov «Light and temperature fields induced by pulsed laser radiation in biological tissues»

12:25—12:40

D. Sitnikov «Microsurgery of zona pellucida of human embryos using infrared femtosecond laser pulses»

12:40—12:55

P. Morozov «Investigation of lipofuscin granules by fluorescence lifetime imaging microscopy»

12:55—13:10

I. Yaroshevich «Ultrafast excited-state dynamics of carotenoid pigment bound to AptaP protein»

13:10—13:25

E. Rimskaya «Enhancing male fertility diagnostics with seminal plasma Raman spectroscopy»

13:25—13:40

A. Nastulyavichus «Wound healing properties of bactericidal silver and copper nanoparticles»

13:40—13:55

E. Ulturgasheva «Size-shape effects in catalysis by laser-induced metal nanoparticles»

13:55—14:10

S. Babina «Laser-induced synthesis of Pd/Au nanoparticles: morphology, size control and ablation parameter optimization»

14:10—14:25

S. Pershin «Picosecond laser induced inactivation of tobacco mosaic virus»

14:25—14:40 Flash talks

A. Bugaets «Breast cancer diagnostics based on Raman spectroscopy with a laser excitation wavelength of 532 nm»

I. Saraeva.«Surface-enhanced IR absorption of *P. aeruginosa* bacteria»

S. Shelygina «Mechanisms of spectral-selective bacterial inactivation using the mid-IR femtosecond laser pulses»

Session 16:00—17:40, Chair: Eteri Tolordava

16:00—16:25

(invited) I. Saraeva «Gd₂O₃ micro- and nanoparticles for the biomedical applications of hyperthermia»

16:25—16:40

B. Yakimov «Prediction of steady-state and time-resolved optical properties of biological chromophores with AI»

16:40—16:55

A. Dunaev «Study of the influence of blood filling of biotissue on the recorded parameters of the macro-FLIM system»

16:55—17:10

A. Fedotov «Cross-peak two-dimensional nonlinear optical spectroscopy for ultrafast analysis of fluorescent proteins»

17:10—17:25

N. Asharchuk «Femtosecond laser fabrication of microstructures in elastic cartilage for tissue engineering of ear transplants»

17:25—17:40

P. Nurgalieva «Assessment of albumin conformation in blood serum by ultrafast fluorescence spectroscopy of bilirubin»

Poster session

Thursday, October 2 / (2nd floor)

Section 1

P01 *I. Metelskii* «Spherically collapsing dipole wave theory»

P02 *V. Kuleshova* «Enhanced magnetic field generation during intense laser irradiation of thin wires in self-focusing plasma »

P03 *S. Perevalov* «Refocusing high-power fs-pulses using cone-shaped curved channels»

P04 *A. Samsonov* «Investigation of THz radiation generated from interaction of relativistic laser pulse with pre-ablated thin-layer liquid jet target»

P05 *O. Sviridova* «Role of polarization in femtosecond laser-plasma driven electron acceleration»

P06 *A. Tausenev* «Influence of a single-cycle, strong THz pulse on a bunch of relativistic electrons»

P07 *I. Umarov* «Energy spread of a finite charge electron bunch in LWFA»

P09 *M. Zakharchuk* «Ablation and surface structuring of copper plates using single pulses of different duration of Nd:glass lasers»

Section 2

P10 *V. Filatov* «Symmetry of polariton field in a crystalline medium»

P11 *A. Grachkov* «Monte-Carlo inelastic electron transport using dielectric function»

P12 *P. Komarov* «Dynamics of movement of a spalling plate for films of various thicknesses during femtosecond heating»

P13 *A. Krupin* «Resonant effects in high-harmonic generation during ionization in the intermediate regime between multiphoton and tunneling»

P14 *T. Mamontova* «Photoionized plasma layer in a magnetic field as a medium for radiation amplification»

P15 *F. Shuklin* «Opto-magnonic photonic time crystal»

P16 *E. Struleva* «Single-pulse ablation of Ni nanoscale films on silicon substrates by femtosecond laser irradiation»

Section 3

P17 *N. Busleev* «Self-organization of surface structures and amorphization of crystalline silicon via infrared femtosecond laser pulses»

P18 *N. Dolzhenko* «Pulsed laser melting of co-deposited silicon-gold layer»

P19 *S. Gavrilov* «Simulation of plasma interferometry of a cathode spot at a wavelength of 532nm»

P20 *D. Obydenov* «C-band broadband emitter integrated on a silicon nitride photonic chip via luminescent particle embedding»

P21 *E. Mavreshko* «Study of thresholds of laser ablation of porous silicon in air and liquid media»

P22 *A. Mumlyakov* «PECVD-synthesized silicon nitride waveguides for nonlinear optical integrated devices»

P23 *A. Rykov* «Single-mode beveled fiber matching device with planar waveguides by 2PP method»

P24 *A. Uspenskiy* «Numerical model for ultrafast optical switching based on half-space non-radiating modes»

Section 5

P25 *O. Minina* «Filamentation multifocal structure during propagation of high-power femtosecond laser pulses in pressured gases»

P26 *K. Shpakov* «An algorithm for processing interferograms using pathfinding and its application in the analysis of electric spark plasma»

P27 *A. Ovchinnikov* «An experimental investigation of the optical properties of thin metal films under the influence of high-intensity THz pulses»

P28 *P. Veliev* «Liquid SF₆ as possible medium for SBS compression of 248-nm KrF laser pulses into subnanosecond range»

P29 *J. Zhu* «Study of nonlinear optical properties in PDMS under femtosecond laser pulse interaction»

Section 6

P30 *A. Bugaets* «Breast cancer diagnostics based on Raman spectroscopy with a laser excitation wavelength of 532 nm»

P31 *I. Saraeva*. «Surface-enhanced IR absorption of *P. aeruginosa* bacteria»

P32 *S. Shelygina* «Mechanisms of spectral-selective bacterial inactivation using the mid-IR femtosecond laser pulses»

For notes



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