



International Conference on  
Ultrafast Optical Science

UltrafastLight-2017

Conference program

3 October, Tuesday				
08:30-9:30	Registration			
	Plenary Session [Hall of Columns]			
09:30-10:00	N.N. Kolachevsky «Femtosecond frequency combs for precision spectroscopy»			
10:00-10:30	A. Maksimchuk «Laser Wakefield Acceleration of Electrons for Radiation Generation»			
10:30-11:00	P. McKenna «Relativistic optics and particle acceleration via a self-generated plasma aperture in a laser-irradiated ultrathin foil»			
11:00-11:30	Coffee Break			
11:30-12:00	S. Tzortzakis «Sculptured ultrashort intense laser and THz beams»			
12:00-12:30	B.N. Chichkov «3D laser printing of microoptical components and nanoparticles»			
12:30-13:00	N.A. Inogamov «Laser ablation: review of some results»			
13:00-15:00	Lunch			
	Ultrafast high-field science. [Conference Hall of Quantum Radio Physics Division]	Ultrafast laser nanofabrication and nanophotonics [Hall of Columns]	Femtosecond non-linear optics. Filamentation [Physical Hall]	Femtosecond radiation in spectroscopy and optical frequency metrology [Theoretical Hall]
15:00-15:30	N.E. Andreev «Laser-plasma sources of high energy electrons»	F. Courvoisier «Processing of transparent dielectrics with ultrafast Bessel beams: from high aspect ratio void formation to stealth nanomachining»	O. Kosareva «Superfilamentation with mid-IR, near IR and UV laser pump wavelengths»	A.N. Kireev «Femtosecond Reference Oscillator for Cs/Rb Fountains»

	Ultrafast high-field science. [Conference Hall of Quantum Radio Physics Division]	Ultrafast laser nanofabrication and nanophotonics [Hall of Columns]	Femtosecond non-linear optics. Filamentation [Physical Hall]	Femtosecond radiation in spectroscopy and optical frequency metrology [Theoretical Hall]
15:30-15:45	<b>K.A. Ivanov</b> «Nanoscale structured targets for enhanced relativistic laser-plasma gamma and hard x-ray source»	<b>A.P. Porfirev</b> «Structured light generated by diffractive optical elements for laser nanofabrication»	<b>S.V. Chekalin</b> «Dynamics and spectra of light bullets in transparent dielectrics»	<b>V. Voropaev</b> «TM-doped all-fiber passively mode-locked ring laser for optical frequency standards in mid-IR»
15:45-16:00	<b>A.M. Fedotov</b> «Impact of radiation reaction on plasma waves generation by ultra-intense laser pulses»	<b>S.N. Khonina</b> «Time behavior of focused structured laser beams: shaping of light on a femtosecond time scale»		<b>K.A. Zagorulko</b> «Low-noise fiber-based fs frequency comb»
16:00-16:15	<b>A.V. Korzhimanov</b> «Detrimental effects of self-generated magnetic fields on target normal sheath ion acceleration»	<b>O.B. Vitrik</b> «Direct laser printing of plasmonic nanostructures and their application»	<b>V.F. Losev</b> «Formation of a highly directional supercontinuum upon filamentation of radiation in air»	<b>D.S. Chernykh</b> «Erbium fiber laser based comb-generators with a frequency parameters stabilization»
16:15-16:30	<b>N.G. Borisenko</b> «Picoseconds and targets»			<b>L.L. Losev</b> «Femtosecond Raman lasers»

16:30-16:35	<b>O.E. Vais</b> «Direct electron acceleration for diagnostic of laser pulse characteristics»			
16:35-16:40	<b>P.A. Ksenofontov</b> «Effects of field ionization and density scale length on ion acceleration from low-density target»			
16:40-16:45	<b>S.V. Kuznetsov</b> «Generation of short electron bunches by laser pulse plasma crossing a sharp boundary of plasma»			
16:45-17:00		<b>P.A. Danilov</b> «Femtosecond laser fabrication of plasmon elements by a structured laser beam»	<b>L.E. Arantchouk</b> «Prolongation of meter scale guided discharge initiated by fs filamentation in air up to ms scale»	<b>M.L. Gorodetskiy</b> «Femtosecond pulses and Kerr combs in microresonators»
17:00-17:05		<b>A.K. Ivanova</b> «Giant double-resonance enhancement of stimulated low-frequency Raman scattering in hybrid metal-capped nanodiamonds»	<b>D.V. Mokrousova</b> «Environmental monitoring of oil products spills on water surface using UV filaments»	
17:05-17:10				
17:10-17:15				
17:15-17:30			<b>V.Yu. Fedorov</b> «Extreme THz fields from two-color filamentation of mid-infrared laser pulses»	

## 4 October, Wednesday

09:00 - 09:30

### Registration

**Ultrafast high-field science.  
[Conference Hall of Quantum Radio  
Physics Division]**

**Ultrafast phenomena in condensed  
matter and ionized gases [Hall of  
Columns]**

**Femtosecond non-linear optics.  
Filamentation [Physical Hall]**

09:30 - 09:45

**A. Faenov** «Ionization and Ultraintense X-Ray Radiation of High Z Foils by Relativistic Femtosecond Laser Pulses Interaction»

**A.A. Melnikov** «Ultrafast structural dynamics in bismuth selenide»

**N. Panov** «Effect of initial pulse chirp on THz generation from femtosecond filaments»

09:45 - 10:00

10:00 - 10:15

**I.A. Tsimbalov** «Electrons acceleration and optical harmonics generation in the relativistic laser-plasma of solid targets»

**N.M. Bulgakova** «Correlation between optical response and thermodynamic properties of free electron gas in metals upon ultrafast laser irradiation: comparing modeling results with experiment»

**D. Uryupina** «Peculiarities of regularized filaments evolution and superfilamentation in air»

10:15 - 10:30

**A.S. Kuratov** «High power terahertz pulse generation by relativistic laser plasma»

10:30 - 10:45

**N. Naumova** «Relativistic lambda-cube regime: the current status»

**T.J.-Y. Derrien** «Surface plasmon polaritons: their properties for different metals and constitutive role in ultrafast laser processing»

**E.S. Sunchugasheva** «Sub-terawatt ultrashort UV pulse parameters characterization»

10:45 - 11:00

**V.V. Kulagin** «Laser engineering of relativistic electron mirrors from gas jet targets»

**E.V. Vasilyev** «Spatiotemporal dynamics of optical vortex in femtosecond mid-IR filament»

11:00 - 11:30

### Coffee Break

	<b>Ultrafast high-field science. [Conference Hall of Quantum Radio Physics Division]</b>	<b>Ultrafast phenomena in condensed matter and ionized gases [Hall of Columns]</b>	<b>Femtosecond non-linear optics. Filamentation [Physical Hall].</b>
11:30 - 11:45	<b>A.B. Savel'ev</b> «Relativistic plasma physics with table top TW femtosecond lasers: science & applications»	<b>E.G. Gamaly</b> «Conversion of transparent dielectric by intense short laser into transient optically inhomogeneous state (Die-Met)»	<b>E.I. Mareev</b> «The effect of wavefront curvature on supercontinuum generation under near-IR femtosecond filamentation in water»
11:45 - 12:00			
12:00 - 12:15	<b>V.F. Kovalev</b> «New analytical solutions for relativistic self-focusing of a laser beam»	<b>A. Kanaev</b> «Surface nanostructuring of semiconductors in the regime of high-density electronic excitation»	<b>V.P. Kandidov</b> «Mid-IR laser coloration recording of single-cycle light bullets in LiF»
12:15 - 12:30	<b>S.G. Bochkarev</b> «Self-generated magnetic vortices growth and propagation in interpenetrating electron-ion beams»		<b>V.O. Kompanets</b> «Similarity criterion for light bullets and supercontinuum formation under femtosecond filamentation in AGVD conditions»
12:30 - 12:45	<b>I.A. Pavlichenko</b> «Fast ponderomotive modification of the electron density profile»	<b>I.V. Oladyshkin</b> «Thermal mechanism of THz generation from metal particles and surfaces»	<b>D. Shipilo</b> «Terahertz radiation ellipticity due to second harmonic birefringence in two-color femtosecond filament»
12:45 - 13:00	<b>V.P. Milant'ev</b> «Autoresonant acceleration of electrons by the powerful laser radiation»	<b>S.G. Bezhanov</b> «On the mechanisms of THz radiation generation on metal surfaces»	<b>E.D. Zaloznaya</b> «The influence of wave packet's scales on femtosecond filamentation and formation of light bullets»
13:00 - 13:15		<b>I.V. Oladyshkin</b> «Anisotropic THz generation from bismuth surface induced by femtosecond laser pulses»	

13:15 - 15:00	Lunch		
	Ultrafast nanofabrication and nanophotonics [Conference Hall of Quantum Radio Physics Division]	Ultrafast phenomena in condensed matter and ionized gases [Hall of Columns]	Femtosecond non-linear optics. Filamentation [Physical Hall].
15:00 - 15:15	<p><b>V.V. Temnov</b> «Electron-phonon-magnon interactions open the door to femtosecond laser nanostructuring»</p>	<p><b>D. Bauer</b> «Density-functional simulations of strong-field physics in solid slabs»</p>	<p><b>S.B. Bodrov</b> «Femtosecond laser filaments: plasma density, decay and discharge guiding»</p>
15:15 - 15:30			
15:30 - 15:45	<p><b>W. Husinsky</b> «Particle emission and Surface-Nano-Patterning during ultrafast laser-matter interaction»</p>	<p><b>T. Apostolova</b> «Laser induced ultrafast processes in dielectrics for applications in nanophotonics»</p>	<p><b>V.D. Zvorykin</b> «Multiple filamentation of subpicosecond terawatt UV laser beam and its possible application»</p>
15:45 - 16:00			<p><b>I.V. Smetanin</b> «Electron-free filamentation of the ultrashort laser pulse driven by coherent stimulated raman self-scattering»</p>
16:00 - 16:15	<p><b>G. Miyaji</b> «Plasmonic near-fields ablation on Si induced with an intense femtosecond laser pulse»</p>	<p><b>A.N. Stepanov</b> «Graphene in strong electromagnetic fields»</p>	<p><b>O.I. Kuchinskaya</b> «Spatial and spectral characteristics of the post-filamentation zone femtosecond laser propagation pulses along the path»</p>
16:15 - 16:30			<p><b>O.I. Kuchinskaya</b> «Characteristics of the zone of multiple filamentation in media with different cubic nonlinearity»</p>

16:30 - 16:45	<b>A. Dostovalov</b> «Formation of transparent thermochemical LIPSS on thin Cr films by femtosecond laser beam scanning»	<b>H. Merdji</b> «High harmonic generation in solids assisted by field enhancement in nanostructures»	<b>A.N. Tsytkin</b> «Determination of the nonlinear refractive index of crystalline ZnSe by modified method of z-scan at THz frequencies»
16:45 - 17:00	<b>O.B. Vitrik</b> «Laser-assisted imprinting of surface gratings on a gold film»		<b>M.V. Melnik</b> «High-efficiency spectral supercontinuum generation in the transparent nonlinear liquid jets»
17:00 - 17:15	<b>V.Ya. Shur</b> «Recent Achievements in Laser Induced Nanodomain Engineering in LiNbO3 and LiTaO3 Crystals»	<b>Y. Levy</b> «Laser-induced periodic surface structure formation: numerical investigation of the temperature dynamics in metals and dielectrics and subsequent stress buildup»	<b>A.V. Shutov</b> «Effective H2O ionization in ambient air at 248 nm laser wavelength»
17:15 - 17:20	<b>Nguyen Van Luong</b> «Large-scale fabrication of sulfur-hyperdoped Si nanosheet arrays via ultrafast laser surface nanotexturing»	<b>B. Obreshkov</b> «Multiphoton absorption coefficients of calcium flouride for 515 wavelength»	<b>Ya.V. Grudtsin</b> «Novel pulse self-shortening based on the transient regime of mechanism of femtosecond multiple filamentation in Kerr media»
17:20 - 17:25			
17:25 - 17:30			
17:30 - 17:45			
17:45 - 18:00		<b>M.E. Veysman</b> «Optical properties of metals stipulated by electron-phonon interaction»	
		<b>A.A. Frolov</b> «Generation of surface waves by a drag current»	
18:00 - 20:00		<b>Free Walking Tour in Moscow</b>	



5 October, Thursday

**Ultrafast high-field science. [Conference Hall of Quantum Radio Physics Division]**

**Ultrafast phenomena in condensed matter and ionized gases [Hall of Columns]**

**Ultrafast nanofabrication and nanophotonics [Theoretical Hall]**

09:30 - 09:45

**M. Grech** «From quantum to classical radiation reaction: a focus on stochasticity effects»

**A.M. Popov** «Spontaneous emission of atoms in strong light field»

**P.N. Melentiev** «UV nonlinear optics with single plasmonic nanostructure»

09:45 - 10:00

10:00 - 10:15

**A.V. Brantov** «Laser plasma sources of charge particles and electromagnetic field: from THz to gamma-rays»

**A.V. Bogatskaya** «Interference stabilization of atoms in strong laser field as a way to obtain amplification and lasing in different frequency ranges»

**S.I. Kudryashov** «Laser fabrication of resonant metal-dielectric and dielectric elements and structures»

10:15 - 10:30

**O.F. Kostenko** «Characterization of the hot electron energy distribution in laser interaction with metal targets»

**V.P. Krainov** «Influence of deexcitation processes on the dynamics of laser-excited argon clusters»

**A.V. Kabashin** «Ultrafast laser-ablative synthesis of ultrapure functional nanomaterials for biomedical applications»

10:30 - 10:45

10:45 - 11:00

**T. Pikus** «Soft X-ray relativistic harmonics and soft and hard X-ray FEL beams high-performance in situ imaging by LIF detectors with sub-micron resolution»

**N.V. Vvedenskii** «Ionization-induced parametric generation of few-cycle electromagnetic pulses»

**I.N. Saraeva** «Ultrashort laser ablation of selenium: effect of pulsewidth and multipulse incubation»

11:00 – 11:30

**Coffee Break**

11:30 - 11:45

**D.V. Pugacheva** «Betatron radiation of charged particles in laser-plasma»

**K.Yu. Vagin** «Electron modes of cold plasma formed at atom photoionization by a short laser pulse of circularly polarized radiation»

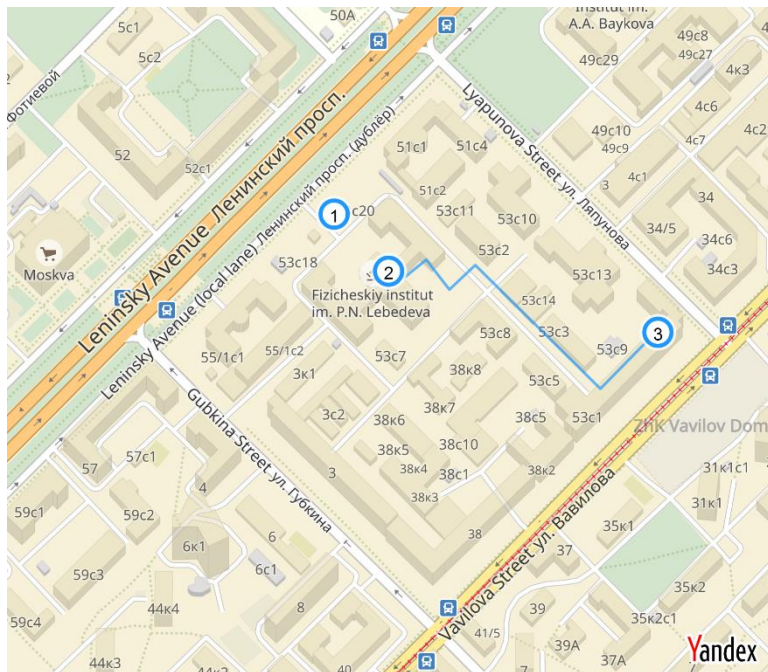
**I.N. Zavestovskaya** «Mechanisms of laser fabrication and fragmentation of nanoparticles»

11:45 - 12:00

**L. Pugachev** «Hot electron generation in interaction of intense laser pulses with near-critical plasma»

**I.V. Smetanin** «Frequency Up-Shift in the Stimulated Thermal Scattering in Two-Photon Absorbing Colloids of Metal Nanoparticles»

	Ultrafast high-field science. [Conference Hall of Quantum Radio Physics Division]	Ultrafast phenomena in condensed matter and ionized gases [Hall of Columns]	Ultrafast nanofabrication and nanophotonics [Theoretical Hall]
12:00 - 12:15	<b>A.A. Mironov</b> «Initiation of self-sustained QED cascades in generic electromagnetic field of electric type»	<b>I.A. Pavlichenko</b> «Volume nanograting formation in laser-silica interaction as a result of the 1D plasma-resonance ionization instability»	<b>A. Dostovalov</b> «Femtosecond-pulse inscription of phase-shifted FBGs and its applications»
12:15 - 12:30	<b>M. Veysman</b> «On emittance of electron bunches accelerated in guiding structures»	<b>S.A. Aseyev</b> «Ultrafast electron microscopy and diffraction with sub-100-keV electron pulses»	<b>A.S. Gritchenko</b> «Plasmon Interferometer for femtosecond pulse duration measurements»
12:30 - 12:45	<b>S.G. Bochkarev</b> «Radial ion acceleration during multispecies plasma expansion»	<b>N.V. Zverev</b> «On Interaction of H-Wave with Metallic – Dielectric Photonic Crystal»	<b>T.T.H. Nguyen</b> «Fabrication of IR-sensors by femtosecond laser pulses»
12:45 - 12:50	<b>D.A. Gozhev</b> «Optimization of laser pulse-low density plasma interaction»		
12:50 - 12:55	<b>V.S. Popov</b> «Effect of the laser pulse self-focusing on the injection and acceleration of electrons in the plasma wake fields»	<b>E.D. Kolykhalova</b> «Ultrashort high-power optical pulses from semiconductor lasers by engineering pulsed electrical pumping»	<b>S. Romashevskiy</b> «Surface microcavities at nanoscale depths produced by ultrafast laser pulses»
12:55 - 13:00	<b>I.I. Metelskii</b> «Nonlinear plasma resonance in inhomogeneous relativistic plasma»		
13:00 - 13:05	<b>G.S. Mishura</b> «Injection and capture of electrons in wakefields generated by a relativistic ion bunch»	<b>V. Medvedev</b> «Fragmentation of liquid micro-droplets excited by laser shock waves»	<b>A.A. Nastulyavichus</b> «The luminescence spectra of the up-convectors excited by laser radiation»
13:05 - 13:10	<b>V.Yu. Bychenkov</b> <b>Closing remarks</b>		<b>V. Koval</b> «Single-shot interference structuring of CuO films by picosecond laser pulses»
13:10 - 13:15			<b>S.F. Umanskaya</b> « Fabrication and optical characterization of epsilon-near-zero vis-metasurfaces»
13:15 - 15:00	<b>Lunch</b>		
15:00 - 18:00	<b>Cultural Programme (Optional)</b>		



1. Passport checkpoint

2. Main Building

*Registration (Main Hall)*

*Physical Hall (1st floor)*

*Hall of Columns (3rd floor)*

*Theoretical Hall (1st floor, right wing)*

3. Quantum Radio Physics Division

*Conference Hall (3rd floor, central part)*

*part)*

*Main canteen (1st floor, left wing)*

## ***Contacts***

### **Scientific Organizing Committee:**

**Chair:** Pavel A. Danilov, [Pavel-Danilov2009@yandex.ru](mailto:Pavel-Danilov2009@yandex.ru), +7(916) 2311941

### **Members:**

Sergey G. Bochkarev, [bochkar@sci.lebedev.ru](mailto:bochkar@sci.lebedev.ru), +7(909) 6455592, topic 1

Konstantin Yu. Vagin, [vagin@sci.lebedev.ru](mailto:vagin@sci.lebedev.ru), +7(499) 1326303, +7(495) 6688888 (6303), topic 2

Pavel A. Danilov, [Pavel-Danilov2009@yandex.ru](mailto:Pavel-Danilov2009@yandex.ru), +7(916) 2311941, topic 3

Elena S. Sunchugasheva, [ses@sci.lebedev.ru](mailto:ses@sci.lebedev.ru), +7(499) 1326735, +7(495) 6688888 (6735), topic 4

Ilya A. Semerikov, [ilia179@mail.ru](mailto:ilia179@mail.ru), +7 (499) 1326721, +7(495) 6688888 (6721), topic 5