



XIV

International CONFERENCE

September 15-20, 2019, Tomsk, Russia

Leningrad Laser
Systems

50
YEARS

OF THE INSTITUTE
OF ATMOSPHERIC
OPTICS

AMPL

2019

PULSED LASERS AND LASER APPLICATIONS

CONFERENCE
PROGRAM



50 YEARS

OF THE INSTITUTE
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V.E. Zuev Institute
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AMPL-2019



The 14th International Conference
AMPL-2019
PULSED LASERS AND LASER APPLICATIONS

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*Atmospheric and Oceanic Optics Journal, Tomsk, Russia
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H-18
16:45**Generators of runaway electrons preionized diffuse discharge plasma and some of their application for surface modification**

M. Erofeev, V. Ripenko, M. Shulepov, and V. Tarasenko
Institute of High Current Electronics SB RAS, Tomsk, Russia



SEPTEMBER 20, 2019, FRIDAY

Session F	CONVERSION OF LASER RADIATION, OPTOELECTRONIC DEVICES, NONLINEAR OPTICS Chairs: V.A. Svetlichniy and K.R. Allahverdiyev
F-1 9:00	Damage threshold of GaSe-type layered crystals under IR laser pulse radiation A.M. Pashayev ¹ , E.Yu. Salayev ² , B.G. Tagiyev ^{1,2} , and K.R. Allahverdiyev ¹ ¹ Azerbaijan National Aviation Academy, Baku/Bina, Azerbaijan; ² Azerbaijan National Academy of Sciences, Baku, Azerbaijan
F-2 9:15	Prospects for the application of uncooled metal bolometers in modern IR and THz systems P.V. Vybornov ^{1,2} ¹ Institute of Monitoring of Climatic and Ecological Systems SB RAS, Tomsk, Russia; ² Tomsk, Россия; Tomsk Polytechnic University, Tomsk, Russia
F-3 9:30	Two-photon-excited luminescence in organic media when pumped with copper, gold and solid-state YAG: Nd³⁺ lasers V.S. Gorelik ^{1,2} , V.V. Savranskii ³ , P.P. Sverbil ¹ , M.R. Kupov ² , D. Bi ² , and Yu.P. Voinov ¹ ¹ Physical Institute RAS, Moscow, Russia; ² Moscow State Technical University, Moscow, Russia; ³ General Physics Institute RAS, Moscow, Russia
F-4 9:45	Study on optical properties of the solutions of Ti and Fe oxides nanoparticles for THz photonic applications D.M. Ezhov ¹ , Z.S. Kochnev ¹ , N.A. Nikolaev ² , A.A. Mamrashev ² , V.A. Svetlichnyi ¹ , and V.N. Cherepanov ¹ ¹ Tomsk State University, Tomsk, Russia; ² Institute of Automation and Electrometry, Novosibirsk, Russia
F-5 10:00	Popular nonlinear optical crystals as downconverters of intense laser radiation, and materials for millimetre-wave applications



	<p><u>N.A. Nikoaev</u>^{1,2}, G.V. Lanskii³, A.A. Mamrashev¹, and Yu. M. Andreev³</p> <p>¹Institute of Automation and Electrometry, Novosibirsk, Russia; ²Institute of Laser Physics SB RAS, Novosibirsk, Russia ³Institute of Monitoring of Climatic and Ecological Systems SB RAS, Tomsk, Russia</p>
F-6 10:15 	<p>Photophysical processes in dielectric crystals under the action of intense femtosecond laser radiation</p> <p><u>V.P. Dresvyanskiy</u>, A.V. Kuznetsov and E.F. Martynovich Irkutsk Branch of Institute of Laser Physics RAS, Irkutsk, Russia</p>
F-7 10:30 	<p>THz emission efficiency in femtosecond laser-induced filament under different pumping conditions</p> <p><u>D.M. Lubenko</u>, V.E. Prokopev, S.V. Alekseev, M.V. Ivanov, and V.F. Losev Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
10:45	COFFEE
F-8 11:00 	<p>Generation of THz emission in nonlinear BBO crystal at room temperature</p> <p><u>G.V. Lansky</u>¹, D.M. Lubenko², A.A. Mamrashev³, N.A. Nikolaev³, Yu.M. Andreev¹, and V.F. Losev²</p> <p>¹Institute of Monitoring of Climatic and Ecological Systems SB RAS, Tomsk, Russia; ²High Current Electronics Institute SB RAS, Tomsk, Russia; ³Institute of Automation and Electrometry SB RAS, Novosibirsk, Russia</p>
F-9 11:15 	<p>Filamentation of ultrashort UV pulses in humid and dry air</p> <p><u>D.V. Mokrousova</u>¹, A.V. Shutov¹, V.Yu. Fedorov^{1,2}, L.V. Seleznev¹, G.E. Rizaev¹, V.D. Zvorykin¹, S. Tzortzakis^{2,3,4}, and A.A. Ionin¹</p> <p>¹Physical Institute RAS, Moscow, Russia; ²Texas A&M University at Qatar, Doha, Qatar; ³Institute of Electronic Structure and Laser, Heraklion, Greece; ⁴University of Crete, Heraklion, Greece</p>
F-10 11:30	<p>Generation of tuned THz-radiation on difference frequency in ZnGeP₂ single crystal over pumping by double frequency radiation of parametric optical generator based on nonlinear KTP crystal</p>



	<p><u>A.A. Syrotkin</u>, A.I. Lyashenko, N.N. Yudin, A.I. Griben'yukov, V.V. Dyomin, M.M. Zinovev, and S.N. Podzyvalov</p> <p>¹Institute of General Physics RAS, Moscow, Russia; ²Scientific and Technological Center for Unique Instrumentation RAS, Moscow, Russia; ³Tomsk State University, Tomsk, Russia</p>
F-11 11:45 	<p>The unimorph deformable mirror for adaptive optics: Numerical simulations and manufacturing</p> <p>D.A. Yagnyatinskiy, A.V. Kurenkov and V.N. Fedoseyev Scientific Industrial Association "Luch", Podolsk, Russia</p>
F-12 12:00 	<p>Comparison of terahertz radiation spectra emitted by single-color IR and UV filaments</p> <p><u>G.E. Rizaev</u>¹, A.A. Ionin¹, O.G. Kosareva^{1,2}, Yu.A. Mityagin¹, D.V. Mokrousova¹, N.A. Panov^{1,2}, S.A. Savinov¹, L.V. Seleznev¹, and D.E. Shipilo^{1,2}</p> <p>¹Physical Institute RAS, Moscow, Russia; ²Moscow State University, Moscow, Russia</p>
12:15	LUNCH
Session E	<p>NON-COHERENT UV AND VUV-RADIATION SOURCES</p> <p>Chair: E.A. Sosnin</p>
E-1 14:00 	<p>Features of the formation of barrier discharge in xenon excimer lamps</p> <p><u>G.N. Zvereva</u>^{1,3}, E.Yu. Letova² and S.M. Avdeev⁴</p> <p>¹University of Civil Aviation, St-Petersburg, Russia; ²ITMO University, St.-Petersburg, Russia; ³State Optical Institute, St.-Petersburg, Russia; ⁴Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
E-2 14:15 	<p>Implementation of the DOAS method for measurements gas pollutants in UV spectral region</p> <p>S.S. Smirnov² and P.P. Geiko¹</p> <p>¹Institute of Monitoring of Climatic and Ecological Systems SB RAS, Tomsk, Russia; ²Tomsk State University, Tomsk, Russia</p>





E-3 14:30	Model of the pulsed periodic discharge in Ar-S₂ mixtures S.V. Avtaeva <i>Institute of Laser Physics SB RAS, Novosibirsk, Russia</i>
E-4 14:45	Possible degradation problems of lithium tetraborate based luminophores in cathodoluminescent UV radiation sources N.Yu. Vereschagina ¹ , M.I. Danilkin ¹ , M.A. Kazaryan ¹ , D.I. Ozol ² , and E.P. Sheshin ² ¹ <i>Physical Institute RAS, Moscow, Russia;</i> ² <i>Moscow Institute of Physics and Technology, Dolgoprudny, Russia</i>
E-5 15:00	Apokamp discharge as a Laboratory analogue of the transient luminous events of middle atmosphere E.A. Sosnin ^{1,2} , E.Kh. Baksht ¹ , V.S. Kuznetsov ¹ , V.A. Panarin ¹ , D.S. Pechenitsyn ¹ , V.S. Skakun ¹ , and V.F. Tarasenko ^{1,2} ¹ <i>Institute of High Current Electronics SB RAS, Tomsk, Russia;</i> ² <i>Tomsk State University, Tomsk, Russia</i>
E-6 15:15	Optical ion beam profile determination using emission from neutral and ionic argon, neon, and nitrogen transitions R. Hampf, A. Ulrich and J. Wieser ¹ <i>Technical University of Munich, Garching, Germany;</i> ² <i>Excitech GmbH, Schortens, Germany</i>
Session G	BIOFOTONICS Chair: A.M. Kabanov
G-1 14:00	Entangled two-photon absorption as non-disturbing imaging and sensing tool D. Tabakaev and R. Thew <i>University of Geneva, Carouge, Switzerland</i>
G-2 14:15	Analysis of lymphedematous tissue using optical coherent elastography A.A. Lokhin ^{1,2} , A.I. Knyazkova ^{1,2} , A.V. Borisov ^{2,3} , Yu.V. Kistenev ^{2,3} , and E.A. Sandykova ^{2,3}



	¹ <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia;</i> ² <i>Tomsk State University, Tomsk, Russia;</i> ³ <i>Siberian State Medical University, Tomsk, Russia</i>
 G-3 14:30	The study of paraffin embedded tissue using multiphoton microscopy A.I. Knyazkova ^{1,2} , L.V. Spirina ^{3,4} , V. V. Nikolaev ^{1,2} , A.V. Borisov ^{1,3} , and Yu. V. Kistenev ^{1,3} ¹ <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia;</i> ² <i>Tomsk State University, Tomsk, Russia;</i> ³ <i>Siberian State Medical University, Tomsk, Russia;</i> ⁴ <i>Cancer Research Institute, Tomsk, Russia</i>
 G-5 14:45	The influence of photosynthetic photon flux on the variation of optical density of Chlorella suspension O.A. Trofimchuk, S.A. Romanenko, S.B. Turanov, and A.N. Yakovlev <i>Tomsk Polytechnic University, Tomsk, Russia</i>
 G-6 15:00	Visualization of the effectiveness of the surface blocking of electrochemical sensors using laser confocal microscopy A.V. Shabalina ¹ , V.V. Krasitskaya ² , D.O. Sharko ¹ , and I.N. Lapin ¹ ¹ <i>Tomsk State University, Tomsk, Russia;</i> ² <i>Institute of Biophysics SB RAS, Krasnoyarsk, Russia</i>
 G-7 15:15	Indirect action of VUV radiation on microorganisms G.N. Zvereva ^{1,4} , I.Yu. Kirtsideli ² and E.Yu. Letova ³ ¹ <i>University of Civil Aviation, St.-Petersburg, Russia;</i> ² <i>Botanical Institute RAS, St.-Petersburg, Russia;</i> ³ <i>ITMO University, St.-Petersburg, Russia;</i> ⁴ <i>State Optical Institute, St.-Petersburg, Russia</i>
 G-8 15:30	The impact of photoactivation on the antibacterial effect of nanoparticles obtained by pulsed laser ablation D.A. Goncharova ¹ , A.L. Nemoykina ¹ , V.O. Trufanov ¹ , S.A. Kulich ² , and V.A. Svetlichnyi ¹ ¹ <i>Tomsk State University, Tomsk, Russia;</i> ² <i>Tokai University, Hiratsuka-Shi, Japan</i>



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G-14 15:45	Transfer function simulation of the human vestibular system <u>M.O. Pleshkov, S.V. Melnichuk, O.V. Demkin, M.V. Svetlik, P.P. Schetinin, D.N. Starkov, and T.V. Rudenko</u> <i>Tomsk State University, Tomsk, Russia</i>
16:00	<i>CLOSING CEREMONY</i>
16:10	<i>COFFEE</i>



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