

# III ALL-RUSSIAN CONFERENCE ON PHOTONICS AND INFORMATION OPTICS

January, 2014, 29-31

## Organizers of the conference

The Russian academy of sciences  
National research nuclear university «MEPhI»

## The Program committee

Chairmans:

Gulyaev Yu.V. – Kotelnikov institute of radioengineering and electronics of the RAS, Moscow  
Evtikhiev N.N. – National research nuclear university «MEPhI», Moscow

Vishnyakov G.N. – Russian research institute for optical and physical measurements,  
Moscow

Volostnikov V.G. – Samara branch of Lebedev physical institute of the RAS

Kozlov S.A. – Saint-Petersburg national research university of information technologies,  
mechanics and optics

Komotskii V.A. – Peoples friendship university of Russia, Moscow

Kompanets I.N. – Lebedev physical institute of the RAS, Moscow

Krishtop V.V. – Far eastern state transport university, Khabarovsk

Kulchin Yu.N. – Institute of automation and control processes FEB RAS, Vladivostok

Lavrov A.P. – Saint-Petersburg state polytechnical university, Russia

Maimistov A.I. – National research nuclear university «MEPhI», Moscow

Malov A.N. – Irkutsk state medical university

Manykin E.A. – National research center “Kurchatov institute”, Moscow

Potaturkin O.I. – Institute of automation and electrometry SB RAS, Novosibirsk

Proklov V.V. – Fryazino branch of Kotel'nikov institute of radioengineering and electronics  
of RAS

Starikov R.S. – National research nuclear university «MEPhI», Moscow

Tverdokhlebl P.E. – Institute of automation and electrometry SB RAS, Novosibirsk

Fetisov Yu.K. – Moscow state technical university of radio-engineering, electronics and  
automation

Fyodorov I.B. – Bauman Moscow state technical university

Shandarov S.M. – Tomsk state university of control systems and radioelectronics

## The Organizing committee

Chairman

Petrovskii A.N. – National research nuclear university «MEPhI», Moscow

Scientific secretary

Rodin V.G. – National research nuclear university «MEPhI», Moscow

## Conference location

National research nuclear university «MEPhI», Moscow, Russia, Kashirskoye shosse, 31

Phone: (499) 324-74-03, Fax: (499) 324-74-03

E-mail: [holo@pico.mephi.ru](mailto:holo@pico.mephi.ru), [holo\\_mephi@mail.ru](mailto:holo_mephi@mail.ru)

THE PROGRAMM OF CONFERENCE

CONFERENCE OPENING. PLENARY

Wednesday, January 29, 2014, 11.00

Room 406

1. ANTSYGIN V.D., POTATURKIN O.I.  
*Institute of automation and electrometry SB RAS, Novosibirsk*  
**Стационарная и нестационарная импульсная терагерцовая спектроскопия**
2. ГЛЕЙМ А.В., ЕГОРОВ В.И., АНИСИМОВ А.А.<sup>1</sup>, НАЗАРОВ Ю.В., КЫНЕВ С.М.,  
РУПАСОВ А.В., ЧИСТЯКОВ В.В., ГАЙДАШ А.А., СМИРНОВ М.А.,  
ЧИВИЛИХИН С.А., КОЗЛОВ С.А.  
*Saint-Petersburg national research university of information technologies, mechanics  
and optics*  
<sup>2</sup>*All-Russian scientific research institute of radio equipment, Saint-Petersburg*  
**Квантовая рассылка криптографического ключа по оптическому волокну  
телекоммуникационного стандарта на расстояние 200 км со скоростью  
0,18 кбит/с**

PLENARY. LECTION FOR YOUNG SCIENTISTS

Wednesday, January 29, 2014, 13.00

Room 406

3. SHANDAROV S.M., KISTENEVA M.G., SHEPELEVICH V.V.<sup>1</sup>  
*Tomsk state university of control systems and radioelectronics*  
<sup>1</sup>*I.P. Shamyakin Mogyr state pedagogical university, Belarus*  
**Фото- и термоиндуцированные эффекты в кристаллах: физические  
явления и приложения**
4. МАИМИСТОВ А.И.<sup>1,2</sup>, ГАБИТОВ И.Р.<sup>3,4</sup>  
<sup>1</sup>*National research nuclear university «MEPhI»*  
<sup>2</sup>*Moscow institute of physics and technology, Dolgoprudny*  
<sup>3</sup>*L.D. Landau institute for theoretical physics, Chernogolovka*  
<sup>4</sup>*University of Arizona, Tucson, USA*  
**Электромагнитное поле на границе раздела положительно и отрицательно  
преломляющих сред**

POSTERS

Wednesday, January 29, 2014, 15.00

Room 406

5. KUZUYAKOV B.A., TИHONOV R.V.  
*Moscow state technical university of radio-engineering, electronics and automation*  
**To the problem of increasing the availability of optical telecommunication system with atmospheric segments**
6. KRIVOROTOV A.S.<sup>1</sup>, NANII O.E.<sup>1,2</sup>, TRESHIKOV V.N.<sup>2</sup>, ULANOVSKIY P.I.<sup>1</sup>  
<sup>1</sup>*Lomonosov Moscow state university*  
<sup>2</sup>*T8 LLC, Moscow*  
**Expansion of application and advancement of optical communication technologies**
7. ZAGIGIN A.A., IL'IN M.Yu., LOBACHEV V.V., STRAKHOV S.Yu.  
*Baltic state technical university «VOENMEH» named after D.F. Ustinov, Saint-Petersburg*  
**Substantiation of methodical parameters for numerical simulation of radiation propagation through turbulent atmosphere**
8. KIIKO V.V., OFICEROV E.N., MIKHAYLOV D.A.  
*Prokhorov general physics institute of the RAS, Moscow*  
**Wide-range high-speed tip/tilt wavefront corrector**
9. MOLCHANOV V.Ya., CHIZHIKOV S.I., YUSHKOV K.B.  
*National university of science and technology «MISIS», Moscow*  
**Adaptive shaping of spectral functions of acousto-optical filters**
10. LAVROV A.P., ZEYDLITS A.A., IVANOV S.I.  
*Saint-Petersburg state polytechnical university*  
**The research of output noise distribution in acoustooptical filter for chirp radiopulses compression**
11. ZACHINYAEV Yu.V.  
*Southern federal university, Taganrog*  
**Simulation of the fiber-optic based chirp generator**
12. DODUKHOVA I.A., BYLINA M.S.  
*Bonch-Bruевич Saint-Petersburg state university of telecommunications*  
**Mathematical model of erbium-doped fiber amplifier**
13. IGNATYEV A.D., ZARENBIN A.V.<sup>1</sup>, GRIDNEVA G.N., KOTOV L.V.<sup>2</sup>, LIKHACHEV M.E.<sup>2</sup>  
*Moscow state university of instrument engineering and informatics*  
<sup>1</sup>*Innovation company «FORC-Photonics», Moscow*  
<sup>2</sup>*Fiber optic research center of the RAS, Moscow*  
**Erbium doped fiber amplifier for atmospheric telecommunication links**
14. LAZAREV V.A., PNIOV A.B., SHELESTOV D.A.  
*Bauman Moscow state technical university*  
**Pulse width stabilization system for picosecond laser**
15. KHRIPUNOV S.A., RADNATAROV D.A., KOBTSEV S.M., SKORKIN A.V.  
*Novosibirsk state university*  
**CW Yb-fiber laser with efficient intracavity frequency doubling in partially coupled enhancement**
16. САМСОНОВА Ж.А.<sup>1,3</sup>, СУРИН А.А.<sup>2,3</sup>

<sup>1</sup> National research nuclear university «MEPhI»

<sup>2</sup> Moscow institute of physics and technology, Dolgoprudny

<sup>3</sup> NTO «IRE-Polus», Fryazino

**Генерация второй гармоники в кристалле LBO от излучения импульсного волоконного ВКР лазера на длине волны 1118 нм**

Meeting 2

Thursday, January 24, 2013, 10.00

Room 405

17. MAXIMENKO V.A.  
*Far eastern state transport university, Khabarovsk*  
**The peculiarities of the photoinduced light scattering in lithium niobate crystals in convergent and divergent beams**
18. MAKAROV V.A., PETNIKOVA V.M., POTRAVKIN N.N., SHUVALOV V.V.  
*Lomonosov Moscow state university*  
**Elliptically polarized waves in an isotropic gyrotropic nonlinear medium: periodic analogues of multisoliton complexes**
19. DOVGİY A.A.<sup>1</sup>, MAIMISTOV A.I.<sup>1,2</sup>  
<sup>1</sup>*National research nuclear university «MEPhI»*  
<sup>2</sup>*Moscow institute of physics and technology, Dolgoprudny*  
**Исследование уединенных электромагнитных волн в цепочке нелинейных волноводов с чередующимися значениями показателя преломления**
20. IVAKHNIK V.V., NIKONOV V.I., SAVEL'EV M.V.  
*Samara state university*  
**The double phase conjugation by six-wave mixing on thermal nonlinearity**
21. BUYANOVSKAYA E.M., KRYSHKOVETS E.V.  
*Saint-Petersburg national research university of information technologies, mechanics and optics*  
**Theoretical model of nonlinear Fabry-Perot interferometer in field of impulses with low oscillation**
22. KAZANTSEVA E.V.<sup>1,2</sup>, MAIMISTOV A.I.<sup>1,3</sup>  
<sup>1</sup>*National research nuclear university «MEPhI»*  
<sup>2</sup>*Joint institute for high temperatures of the RAS, Moscow*  
<sup>3</sup>*Moscow institute of physics and technology, Dolgoprudny*  
**Когерентное усиление волн в антинаправляющем волоконном ответвителе с резонансными примесными атомами**
23. KAUROV A.V.  
*Samara state university*  
**Four-wave radiation under quasiperpendicular interaction**
24. KRAISKII A.A., KRAISKII A.V.  
*Lebedev Physical Institute of the RAS, Moscow*  
**The conditions of increasing of light intensity in the nonabsorbing periodically layered structure**
25. YABLOKOVA L.V.<sup>1,2</sup>, GOLOVASHKIN D.L.<sup>1,2</sup>  
<sup>1</sup>*S.P. Korolyov Samara state aerospace university)*  
<sup>2</sup>*Image processing systems institute of the RAS, Samara*

**Joint finite-difference solution of the Dalamber and Maxwell's equations. The two-dimensional case**

26. ARTIOUKOV I.A., FESHCHENKO R.M., POPOV N.L., VINOGRADOV A.V.  
*Lebedev Physical Institute of the RAS, Moscow*  
**On the direct and inverse problems in coherent imaging of tilted objects**
27. LEVIN I.A.  
*JSC Rostov optical-mechanical plant, Yaroslavl region*  
**The hybrid athermal "varifocal" objectives of long-wave IR range**
28. MANYKIN E.A.<sup>1,2</sup>, MELNICHENKO E.V.<sup>1</sup>  
<sup>1</sup>*National research nuclear university «MEPhI»*  
<sup>2</sup>*National research center "Kurchatov institute", Moscow*

**Квантовые вычисления и коммуникации на основе свойств фотонного эха**

*Meeting 3*

Thursday, January 30, 2014, 13.00

Room 406

29. KOLYADIN A.N., ALAGASHEV G.K., LUKOVKIN A.Yu.<sup>1</sup>, KOSOLAPOV A.F.,  
PRYAMIKOV A.D., BIRIUKOV A.S.  
*Fiber optic research center of the RAS, Moscow*  
<sup>1</sup>*Moscow institute of physics and technology, Dolgoprudny*  
**Influence of band on characteristics of hollow-core microstructured optical fibers with a negative curvature of the core boundary**
30. DOSTOVALOV A.V.<sup>1</sup>, WOLF A.A.<sup>1</sup>, DUBOV M.V.<sup>2</sup>, MEZENTSEV V.K.<sup>2</sup>,  
BABIN S.A.<sup>1,3</sup>  
<sup>1</sup>*Institute of automation and electrometry SB RAS, Novosibirsk*  
<sup>2</sup>*Aston University, Birmingham, UK*  
<sup>3</sup>*Novosibirsk state university*  
**Point-by-point inscription of fiber Bragg grating by femtosecond radiation at a wavelength of 515 nm and its characterization**
31. KOROLENKO P.V., LOGACHEV P.A., MISHIN A.Yu., RYZHIKOVA Yu.V.  
*Lomonosov Moscow state university*  
**New possibilities improve the means of optical diagnostics of aperiodic structures with fractal properties**
32. VEKSHIN M.M., NIKITIN V.A., YAKOVENKO N.A.  
*Kuban state university, Krasnodar*  
**Fabrication and study of single-mode waveguide structures in glass with operating wavelength 1.55  $\mu\text{m}$**
33. MAKSIMOV M.I., PAVLOV S.V., CHEKHLOVA T.K.  
*Peoples' friendship university of Russia, Moscow*  
**Temperature dependence of effective refractive index in channal optical sol-gel waveguides over a wide temperature range**
34. MASALSKY N.V.  
*Scientific research institute of system researches of the RAS, Moscow*  
**Optimization of technological parameters of soi grating coupler**
35. ZUEV I.A.  
*Bonch-Bruевич Saint-Petersburg state university of telecommunications*

**Elimination ghosts during measuring short lines by OTDR**

36. SOTNIKOVA G.Yu., ALEKSANDROV S.E., GAVRILOV G.A., KAPRALOV A.A.  
*Ioffe physical-technical institute of the RAS, Saint-Petersburg*

**High-speed fiber-optic A3B5 photodiode sensors for IR- photometry**

37. BORODAKO K.A.<sup>1</sup>, SHEYFER D.V.<sup>1,2</sup>, SHELYAKOV A.V.<sup>1</sup>, SITNIKOV N.N.<sup>1,3</sup>

<sup>1</sup>*National research nuclear university «MEPhI»*

<sup>2</sup>*University of Hamburg, Germany*

<sup>3</sup>*Federal state unitary enterprise "Keldysh research center", Moscow*

**Разработка термочувствительного элемента с обратной памятью формы для волоконно-оптического термодатчика**

38. ALIEV S.A., TROFIMOV N.S., CHEKHLOVA T.K.

*Peoples' friendship university of Russia, Moscow*

**Investigation of gel technology-fabricated films properties**

39. GORDIENKO A.V., EGOROV A.N., MAVRITSKIY O.B., PECHENKIN A.A., SAVCHENKOV D.V.

*National research nuclear university «MEPhI»*

**Корреляция ионизационной реакции в чувствительных точках и уровня стойкости к воздействию отдельных ядерных частиц при лазерном тестировании интегральных схем**

40. ODINOKOV S.B., SAGATELYAN G.R.

*Bauman Moscow state technical university*

**Creation of phase diffraction optical elements to form the dotted etalon images**

*Meeting 4*

Thursday, January 30, 2014, 16.00

Room 406

41. BOLDYREV K.N., PISAREV R.V.<sup>1</sup>, POPOVA M.N., BEZMATERNYKH L.N.<sup>2</sup>

*Institute for spectroscopy of the RAS, Troitsk*

<sup>1</sup>*Ioffe physical-technical institute of the RAS, Saint-Petersburg*

<sup>2</sup>*Kirensky Institute of physics SB RAS, Krasnoyarsk*

**Features in optical spectra of ferroelectric  $\text{CuB}_2\text{O}_4$**

42. NALBANTOV N.N., STROGANOVA E.V., GALUTSKIY V.V.

*Kuban state university, Krasnodar*

**Distribution of electromagnetic field in end-pumped  $\text{Er}^{3+}, \text{Yb}^{3+}$ -codoped gradient laser crystals**

43. ЗАСЕДАТЕЛЕВ А.В.<sup>1</sup>, ПУШКАРЕВ В.Е.<sup>2</sup>, КАРПО А.Б.<sup>3</sup>, ФЕОФАНОВ И.Н.<sup>4</sup>, КРАСОВСКИЙ В.И.<sup>1,3</sup>

<sup>1</sup>*National research nuclear university «MEPhI»*

<sup>2</sup>*Lomonosov Moscow state university*

<sup>3</sup>*Prokhorov general physics institute of the RAS, Moscow*

<sup>4</sup>*Lebedev Physical Institute of the RAS, Moscow*

**Диссоциация поверхностно активных веществ под воздействием интенсивного лазерного облучения нанокристаллов CdSe**

44. МАТЮШКИН Л.Б.<sup>1</sup>, МУСИХИН С.Ф.<sup>2</sup>, АЛЕКСАНДРОВА О.А.<sup>1</sup>, МОШНИКОВ В.А.<sup>1,2</sup>

<sup>1</sup>*Saint-Petersburg state electrotechnical university "LETI"*

<sup>2</sup>*Saint-Petersburg state polytechnical university*

**Chemical synthesis of semiconductor nanoparticles for visible and near-infrared optical range**

45. DEGODA V.Ya., KUCHAKOVA I.Yu.

*Taras Shevchenko National University of Kyiv, Ukraine*

**Kinetic attenuation of the phosphorescence of luminescent ceramics ZnS-Mn at X-ray excitation**

46. ДОВЖЕНКО Д.С., МАРТЫНОВ И.Л., ЕРЕМИН И.С., ЧИСТЯКОВ А.А.

*National research nuclear university «MEPhI»*

**Исследование фотолюминесценции квантовых точек CdSe/ZnS, внедренных в микрорезонатор из пористого кремния**

47. ADAMOV G.E., ZINOVIEV E.V., SHMELIN P.S., POROSHIN N.O., GREBENNIKOV E.P.

*Central research technological institute "Technomach", Moscow*

**Changing the parameters of the bacteriorhodopsin photocycle in hybrid nanostructures**

48. GORYAEV M.A., SMIRNOV A.P.

*Herzen Russian state pedagogical university, Saint-Petersburg*

**Sensitization of photoprocesses in solids by dyes**

49. PYNENKOV A.A., NISHCHEV K.N., FIRSTOV S.V.<sup>1</sup>

*Ogarev Mordovia State University, Saransk*

<sup>1</sup>*Fiber optic research center of the RAS, Moscow*

**The investigation of redox synthesis conditions on spectral-luminescent properties of Bi-doped germanate glasses**

50. AGAFONOVA D.S.<sup>1,2</sup>, SIDOROV A.I.<sup>1,2</sup>, KOLOBKOVA E.V.<sup>2</sup>, IGNATIEV A.I.<sup>2</sup>, NIKONOROV N.V.<sup>2</sup>

<sup>1</sup>*Saint-Petersburg state electrotechnical university "LETI"*

<sup>2</sup>*Saint-Petersburg national research university of information technologies, mechanics and optics*

**Optical glasses and fibers containing silver molecular clusters and semiconductor quantum dots for fiber optic sensors**

51. BABKINA A.N., SHIRSHNEV P.S., TSEKHOMSKII V.A., NIKONOROV N.V.

*Saint-Petersburg national research university of information technologies, mechanics and optics*

**Temperature effect on the exciton absorption of CuHal nanocrystals in potassium-alumina-borate glasses**

52. БУДОВИЧ В.Л.<sup>1</sup>, БУДОВИЧ Д.В.<sup>1</sup>, КОТКОВСКИЙ Г.Е., ПЕРЕДЕРИЙ А.Н.<sup>2</sup>, СЫЧЕВ А.В., ЧИСТЯКОВ А.А.

*National research nuclear university «MEPhI»*

<sup>1</sup>*Chromdet ecology analytical instruments, Moscow*

<sup>2</sup>*Moscow state technical university of radio-engineering, electronics and automation*

**Спектрометр приращенния ионной подвижности с эксимерным источником ионизации**

*Meeting 5*

Friday, January 31, 2014, 10.00

Room 406

53. MAMRASHEV A.A., NIKOLAEV N.A.  
*Institute of automation and electrometry SB RAS, Novosibirsk*  
**Стационарная терагерцовая спектроскопия нелинейно-оптических кристаллов**
54. GRACHEV Ya.V., OSIPOVA M.O., BESPALOV V.G.  
*Saint-Petersburg national research university of information technologies, mechanics and optics*  
**The method for determination of an emission spectral bandwidth for pulsed THz time-domain spectroscopy systems**
55. KCHARCHENKO S.A., GALUTSKIY V.V., KUZORA V.F., STROGANOVA E.V., YAKOVENKO N.A.  
*Kuban state university, Krasnodar*  
**THz refraction spectra of gradient lithium niobate**
56. ДАЙНЕКО С.В., МАРТЫНОВ И.Л., ЧИСТЯКОВ А.А., САМОХВАЛОВ П.С., НИКИТЕНКО В.Р., ЛЫПЕНКО Д.А.<sup>1</sup>, МАЛЬЦЕВ Е.И.<sup>1</sup>  
*National research nuclear university «MEPhI»*  
<sup>1</sup>*Frumkin institute of physical chemistry and electrochemistry of the RAS, Moscow*  
**Органические светодиоды с активным слоем на основе квантовых точек CdSe/ZnS**
57. POZHIDAEV E.P., MINCHENKO M.V., TORGOVA S.I.  
*Lebedev Physical Institute of the RAS, Moscow*  
**Electrically controlled phase modulation of light in helicoidal nanostructures of the ferroelectric liquid crystals**
58. GONCHAROVA P.S., KRISHTOP V.V., LIVASHVILI A.I., FALEEV D.S., LEBEDEV V.A.<sup>1</sup>  
<sup>1</sup>*Far eastern state transport university, Khabarovsk*  
<sup>2</sup>*Komsomolsk-on-Amur state technical university*  
**Determination of the limiting angular aperture of electro-optic modulators**
59. SEREBRENNIKOV L.Ya., KRAKOVSKY V.A., PARGACHEV I.A., SHANDAROV S.M., CHUMANOV M.V.  
*Tomsk state university of control systems and radioelectronics*  
**Acousto-optic modulators of laser radiation on the basis of RKTP crystals**
60. KUTUZA I.B., POZHAR V.E., PUSTOVOIT V.I.  
*Scientific and technological center of unique instrumentation of the RAS, Moscow*  
**The method of measurement and reconstruction of continuous optical spectra for a acousto-optic spectrometers**
61. PERCHIK A.V., TOLSTOGUZOV V.L., TSEPULIN V.G., STASENKO K.V.  
*Bauman Moscow state technical university*  
**Acousto-optic micro video spectrometers for different applications**
62. BUSURIN V.I., AKHLAMOV P.S., BERDJUGIN N.A.  
*Moscow aviation institute (National research university)*  
**Research of characteristics of acceleration sensor based on optical tunneling effect**
63. ROMASHKO R.V.<sup>1,2</sup>, EFIMOV T.A.<sup>1,2</sup>  
<sup>1</sup>*Institute of automation and control processes of FEB RAS, Vladivostok*  
<sup>2</sup>*Far eastern federal university, Vladivostok*  
**Holographic interferometer for study of sub-micron scale objects oscillations**



64. SHEPELEVICH V.V., MAKAREVICH A.V., DUBINA M.V., SHANDAROV S.M.<sup>1</sup>  
*I.P. Shamyakin Mozyr state pedagogical university, Belarus*  
<sup>1</sup>*Tomsk state university of control systems and radioelectronics*  
**Output characteristics of mixed holograms in BTO crystal**

*Meeting 6*

Friday, January 31, 2014, 13.00

Room 406

65. BYKOVSKY A.Yu.<sup>1</sup>, RAGER B.Yu.  
*National research nuclear university «MEPhI»*  
<sup>1</sup>*Lebedev Physical Institute of the RAS, Moscow*  
**Heterogeneous model of optoelectronic data processing in the network centric system mobile agent**
66. BEREZHNOY V.N.<sup>1</sup>, ZAKHAROV M.S.<sup>2</sup>, ZAKHAROV S.M.  
*Institute of electronic controlling computers, Moscow*  
<sup>1</sup>*JSC «NeuroLab», Moscow*  
<sup>2</sup>*JSC «Sberbank-technology», Moscow*  
**Spectral-temporal dynamics of pulse wave signals obtained by photoplethysmography**
67. YAKOVLEVA T.V.  
*Dorodnicyn Computing Centre of RAS, Moscow*  
**Theoretical calculation of noise and signal at the Rician envelope analysis**
68. IVANOV P.A.  
*Yaroslavl state technical university*  
**Сравнение характеристик корреляционных пиков для составных фильтров в задачах распознавания изображений**
69. ZLOKAZOV E.Yu., PETROVA E.K., STARIKOV R.S., SHAULSKY D.V.  
*National research nuclear university «MEPhI»*  
**Исследование корреляционных метрик для распознавания изображений с использованием инвариантных фильтров с минимумом шума и энергии корреляции**
70. VOLOSTNIKOV V.G., KISHKIN S.A., KOTOVA S.P.  
*Samara branch of Lebedev physical institute of the RAS*  
**Spiral beams in contour analysis: numerical modelling, new extensions**
71. MYSINA N.Yu.<sup>1,2</sup>, MAKSIMOVA L.A.<sup>1</sup>, RYABUKHO V.P.<sup>1,2</sup>  
<sup>1</sup>*Saratov state university*  
<sup>2</sup>*Institute of precision mechanics and control of the RAS, Saratov*  
**Statistical distribution of the phase difference in speckle-field**
72. NIKOLAYEVA T.Yu., PETROV N.V., STASELKO D.I.  
*Saint-Petersburg national research university of information technologies, mechanics and optics*  
**Statistical study of scattering and radiating particles in the optical medium**
73. BASISTY E.V.  
*Peoples' friendship university of Russia, Moscow*  
**Detection of small linear displacements with phase step structure**
74. PAVLOV I.N., SUROVTSEV P.Yu., TOLKACHEV A.V.

*National research university "Moscow power engineering institute"*

**Determination of diffusion coefficient in two-layer liquid by laser refractography**

75. LATUSHKO M.I., VISHNYAKOV G.N., LEVIN G.G.

*All-Russian research institute for optical and physical measurements, Moscow*

**Phase shifting interferometry for living cells microscopy**

76. SMIRNOV I.V., KALYANOV A.L., LYCHAGOV V.V.

*Saratov state university*

**Dispersion effects in broadband interference microscopy**

*Meeting 7*

Friday, January 31, 2014, 16.00

Room 406

77. MOROZOV A.V., PUTILIN A.N., KOPENKIN S.S.<sup>1</sup>, BORODIN Yu.P.<sup>1</sup>

*Lebedev Physical Institute of the RAS, Moscow*

<sup>1</sup>*Moscow state technical university of radio-engineering, electronics and automation*

**Multihogel schemes for 3D holographic printing**

78. YANOVSKIY A.V.

*Scientific technical centre "Atlas", Moscow*

**The novel approach to protective holography: the combined hologram on the basis of analog image 3D-objects**

79. GANZHERLI N.M., GULYAEV S.N.<sup>1</sup>, MAURER I.A., CHERNYKH D.F.

*loffe physical-technical institute of the RAS, Saint-Petersburg*

<sup>1</sup>*Saint-Petersburg state polytechnical university*

**Holographic methods of diffuser manufacturing**

80. PAVLOV A.V.

*Saint-Petersburg national research university of information technologies, mechanics and optics*

**Cognitive dissonance modelling by Fourier-holography technique**

81. BETIN A.Yu., BOBRINEV V.I., DONCHENKO S.S., ZLOKAZOV E.Yu.

*Bauman Moscow state technical university*

**Methods of recovering multiplexed computer synthesized one dimensional Fourier holograms for holographic memory**

82. BONDAREVA A.P., EVTIKHIEV N.N., KRASNOV V.V., STARIKOV S.N.

*National research nuclear university «MEPhI»*

**Схема оптического кодирования с пространственно-некогерентным освещением и возможностью динамической смены кодирующего ключа**

83. EVTIKHIEV N.N., PORSHNEVA L.A., STARIKOV S.N., CHERYOMKHIN P.A.

*National research nuclear university «MEPhI»*

**Улучшение качества численного и оптического восстановления изображений с цифровых голограмм**

84. SAVONIN S.A., ABRAMOV A.Yu., RYABUKHO P.V.

*Saratov state university*

**The numerical correction of phase shifts in the digital holographic interferometry**

85. DUDENKOVA V.V., KISELEV B.I., ZAKHAROV Yu.N.

*Lobachevsky state university of Nizhny Novgorod*

**Features of use fluorofor's blinking for receiving super resolution in case of combination with holographic measurement of optical thickness**

86. KRAISKII A.V., MIRONOVA T.V.  
*Lebedev Physical Institute of the RAS, Moscow*  
**Comparison of holographic interferometry and background oriented schlieren method in refractometric measurements of diffusion process**
87. SAITOV S.V., ANDREEVA N.V., ANDREEVA O.V.  
*Saint-Petersburg national research university of information technologies, mechanics and optics*  
**Evaluation of optical constants of nanoporous hologram**
88. MOLODTSOV D.Yu., RODIN V.G., STARIKOV S.N.  
*National research nuclear university «MEPhI»*  
**Распознавание по пространственным и спектральным параметрам объектов с протяжённым спектром излучения в дисперсионном корреляторе**

### Posters

89. KUZYAKOV B.A., TИHONOV R.V.  
*Moscow state technical university of radio-engineering, electronics and automation*  
**Effective methods to increase the range of the optical wireless telecommunication system**
90. KUZYAKOV B.A., SHILOV I.P.<sup>1</sup>, TИHONOV R.V.  
*Moscow state technical university of radio-engineering, electronics and automation*  
<sup>1</sup>*Kotel'nikov institute of radio engineering and electronics of RAS, Moscow*  
**Composition modes stabilization in the fiber-optical amplifiers of the combined telecommunications lines**
91. SLEPTSOV M.A.<sup>2</sup>, NANII O.E.<sup>1,2</sup>, TRESHIKOV V.N.<sup>2</sup>, SACHALIN E.A.<sup>2</sup>  
<sup>1</sup>*Lomonosov Moscow state university*  
<sup>2</sup>*T8 LLC, Moscow*  
**Metrological assurance during operation of fiber-optic telecommunication systems**
92. IVANOV S.I., LAVROV A.P., SAENKO I.I.  
*Saint-Petersburg state polytechnical university*  
**Dynamic range and S/N ratio in beamforming systems for microwave PAA based on analog photonics elements**
93. SIMONOV M.A., ZARENBIN A.V.<sup>1</sup>, GRIDNEVA G.N.  
*Moscow state university of instrument engineering and informatics*  
<sup>1</sup>*Innovation company «FORC-Photonics», Moscow*  
**Experience of development and application fiber-optic monitoring of the complex object coking unit of petroleum products**
94. RADNATAROV D.A., KHRIPUNOV S.A., KOBTSEV S.M., LUNIN V.M.  
*Novosibirsk state university*  
**High-power CW single-frequency Nd:YVO<sub>4</sub>/LBO laser quasi-continuously tuneable over a wide frequency range**
95. BRJUKHANOVA T.N.<sup>1</sup>, KRISHTOP V.V., LIVASHVILI A.I., YAKUNINA M.I.

*Far eastern state transport university, Khabarovsk*

*<sup>1</sup>Pacific state university, Khabarovsk*

**Nonlinear absorption of radiation in nanofluids**

96. AKIMOV A.A., VOROB'EVA E.V., IVAKHNIK V.V.

*Samara state university*

**The time characteristics of a four-wave converter on thermal nonlinearity**

97. AVERBUKH B.B.

*Pacific state university, Khabarovsk*

**Refraction of a plane S-polarized electromagnetic wave at the output of the medium consisting of electric and magnetic dipoles with negative polarizabilities**

98. KAMENEV O.T.<sup>1,2</sup>, KOLCHINSKIY V.A.<sup>1</sup>, PETROV Yu.S.<sup>1</sup>, ROMASHKO R.V.<sup>1,2</sup>

*<sup>1</sup>Institute of automation and control processes of FEB RAS, Vladivostok*

*<sup>2</sup>Far eastern federal university, Vladivostok*

**The application of bismuth titanate for adaptive fiber optic seismometer**

99. YAROVoi L.K., IVASHCHENKO D.A., ROZUMNUK V.I.

*Taras Shevchenko National University of Kyiv, Ukraine*

**The phase noise suppression in fiber probe of the laser Doppler vibrometer working in nanometer range**

100. DOSTOVALOV A.V.<sup>1</sup>, WOLF A.A.<sup>1</sup>, DUBOV M.V.<sup>2</sup>, BABIN S.A.<sup>1,3</sup>

*<sup>1</sup>Institute of automation and electrometry SB RAS, Novosibirsk*

*<sup>2</sup>Aston University, Birmingham, UK*

*<sup>3</sup>Novosibirsk state university*

**Femtosecond point-by-point inscription of fiber Bragg gratings through the polyimide coating**

101. DOSTOVALOV A.V.<sup>1</sup>, KOROLKOV V.P.<sup>1,3</sup>, BABIN S.A.<sup>1,3</sup>, GOLUBTSOV S.K.<sup>1</sup>, KONDRATIEV V.I.<sup>2</sup>

*<sup>1</sup>Institute of automation and electrometry SB RAS, Novosibirsk*

*<sup>2</sup>Institute of nuclear physics SB RAS, Novosibirsk*

*<sup>3</sup>Novosibirsk state university*

**Formation of two dimensional and tilted periodic structures induced by femtosecond radiation on metal surface**

102. NIKITIN V.A., SKREDOVA Ju.I., YAKOVENKO N.A.

*Kuban state university, Krasnodar*

**Fabrication of oval microlenses in glass**

103. БАРКАЛОВ К.Е., ДОВЖЕНКО Д.С., ЧИСТЯКОВ А.А.

*National research nuclear university «MEPhI»*

**Исследование зависимости спектра отражения микрорезонатора Фабри-Перо на основе пористого кремния от параметров многослойной структуры**

104. YEVCHIK A.V., MOISEYENKO V.N., DERGACHOV M.P., SHVETS T.V.

*Oles' Honchar Dnipropetrovs'k national university, Ukraine*

**Matrix nanocomposites for increasing of solar cell conversion efficiency**

105. BOLDYREV K.N., POPOVA E.A.<sup>1</sup>, DOBRETSOVA E.A., MAL'TSEV V.V.<sup>2</sup>, LEONYUK N.I.<sup>2</sup>

*Institute for spectroscopy of the RAS, Troitsk*

*<sup>1</sup>HSE Moscow state institute of electronics and mathematics*

*<sup>2</sup>Lomonosov Moscow state university*

**Magnetic and optical properties of SmCr<sub>3</sub>(BO<sub>3</sub>)<sub>4</sub>**

106. DYU V.G., KHUDYAKOVA E.S., KISTENEVA M.G., SHANDAROV S.M., KARGIN Yu.F.<sup>1</sup>  
*Tomsk state university of control systems and radioelectronics*  
<sup>1</sup>*Baikov institute of metallurgy and materials sciences of the RAS, Moscow*  
**Dynamics of photoinduced changes in Bi<sub>12</sub>TiO<sub>20</sub>:Al crystals induced by pulsed continuous radiation**
107. УМРЕЙКО Д.С.<sup>1</sup>, ВИЛЕЙШИКОВА Е.В., КОМЯК А.И., ЗАЖОГИН А.П., УМРЕЙКО С.Д.<sup>1</sup>  
*Belarusian state university, Minsk, Belarus*  
<sup>1</sup>*Sevchenko research institute of applied physical problems, Minsk, Belarus*  
**Исследование процессов образования нанокластеров оксидов урана на поверхности оксидированного алюминия**
108. ПАТАПОВИЧ М.П., ЧИнь Н.Х., ЛЭ Т.К.А., ЗАЖОГИН А.П., БУЛОЙЧИК Ж.И.  
*Belarusian state university, Minsk, Belarus*  
**Синтез нанокластеров оксидов цинка легированных железом и медью из ортофосфатных солей в пористых образцах при лазерной абляции**
109. KUZISHCHIN Yu.A., DOVZHENKO D.S., MARTYNOV I.L., CHISTYAKOV A.A.  
*National research nuclear university «MEPhI»*  
**Образование отрицательных ионов молекул тринитротолуола на поверхности пористого кремния при воздействии лазерного излучения различных длин волн**
110. EGOROV V.I., ZVIAGIN I.V., KLYUKIN D.A., NASHCHYOKIN A.V.<sup>1</sup>, SIDOROV A.I.  
*Saint-Petersburg national research university of information technologies, mechanics and optics*  
<sup>1</sup>*Ioffe physical-technical institute of the RAS, Saint-Petersburg*  
**Silver nanoparticles formation on the surface of silver-containing glasses by laser ablation**
111. DEMICHEV I.A.<sup>1</sup>, NIKONOROV N.V.<sup>1</sup>, SIDOROV A.I.<sup>1</sup>, KHRUSCHOVA T.A.<sup>1,2</sup>  
<sup>1</sup>*Saint-Petersburg national research university of information technologies, mechanics and optics*  
<sup>2</sup>*Saint-Petersburg state polytechnical university*  
**The effect of copper-sodium ion-exchange on optical properties of sodium silicate glasses**
112. EGORYSHEVA A.V.<sup>1</sup>, MELEKHOV A.P., GERASIMOV I.A., BOGDANOV G.S., SIPAILO I.P., DUDKINA T.D., LAVRUKHINE D.V.  
*National research nuclear university «MEPhI»*  
<sup>1</sup>*Kurnakov institute of general and inorganic chemistry of the RAS, Moscow*  
**Люминесценция прозрачной стеклокерамики, содержащей кристаллиты Ca<sub>1-x</sub>Eu<sub>x</sub>F<sub>2</sub>**
113. БАВКИНА А.Н., NIKONOROV N.V., SIDOROV A.I., SHIRSHNEV P.S., SHAKHVERDOV T.A.  
*Saint-Petersburg national research university of information technologies, mechanics and optics*  
**Luminescent thermochromism of potassium-alumina-borate glasses with (Cu<sub>2</sub>O)<sub>n</sub> molecular clusters**
114. DEMICHEV I.A.<sup>1</sup>, SIDOROV A.I.<sup>1</sup>, NIKONOROV N.V.<sup>1</sup>, KHRUSCHOVA T.A.<sup>1,2</sup>  
*Saint-Petersburg national research university of information technologies, mechanics and optics*

<sup>2</sup>*Saint-Petersburg state polytechnical university*

**The luminescence features of the photothermorefractive glasses doped with the silver and rare-earth metal ions**

115. КРИВЕНКОВ В.А., КОТКОВСКИЙ Г.Е., НАБИЕВ И.Р., САМОХВАЛОВ П.С., СОЛОВЬЕВА Д.О., ЧИСТЯКОВ А.А.

*National research nuclear university «MEPhI»*

**Влияние поверхностных лигандов на модификацию спектральных свойств квантовых точек УФ-лазерным излучением**

116. ФАДАИЯН А.Р., АЛЬДИГУИ Х.А.Р., ВОРОПАЙ Е.С., ЗАЖОГИН А.П.

*Belarusian state university, Minsk, Belarus*

**Исследование влияния между импульсного интервала на процессы образования наночастиц и фракталов оксидов свинца на поверхности стекла при напылении тонких пленок сдвоенными лазерными импульсами при атмосферном давлении воздуха**

117. УМРЕЙКО Д.С.<sup>1</sup>, ВИЛЕЙШИКОВА Е.В., КОМЯК А.И., ЗАЖОГИН А.П., УМРЕЙКО С.Д.<sup>1</sup>

*Belarusian state university, Minsk, Belarus*

<sup>1</sup>*Sevchenko research institute of applied physical problems, Minsk, Belarus*

**Спектральные исследования процессов фотохимического образования наноконплексов урана переменной валентности в ацетоне с ДМСО**

118. BABANIN V.F., IVANOV P.A., MIKHALEVA N.V., MOROZOV V.V.

*Yaroslavl state technical university*

**Detection and identification of nanosize minerals of iron with magnetic order using ngrs method in living matter**

119. ROMASHKO R.V.<sup>1,2</sup>, KOLCHINSKIY V.A.<sup>1</sup>

<sup>1</sup>*Institute of automation and control processes of FEB RAS, Vladivostok*

<sup>2</sup>*Far eastern federal university, Vladivostok*

**Research on photochromic properties of gallium nitride**

120. SIDOROV N.V.<sup>1</sup>, PALATNIKOV M.N.<sup>1</sup>, TEPLYAKOVA N.A.<sup>1</sup>, PIKOUL O.Yu.

*Far eastern state transport university, Khabarovsk*

<sup>1</sup>*I.V. Tananaev institute of chemistry and technology of rare elements and mineral raw materials of Kola Science Center of the RAS, Apatity, Murmansk region*

**Conoscopic study of the optical homogeneous of monocrystals LiNbO<sub>3</sub>: Mg (5,21) mol.% and LiNbO<sub>3</sub>: Fe(0,009):Mg (5,04) mol.%**

121. LITVINOVA V.A., LITVINOVA M.N.

*Far eastern state transport university, Khabarovsk*

**Upconversion of broadband IR-radiation in LiNbO<sub>3</sub>:Zn crystals**

122. GALUTSKIY V.V., STROGANOVA E.V., SHMARGILOV S.A., YAKOVENKO N.A.

*Kuban state university, Krasnodar*

**The comparative analysis of efficiency PPLN from gradient crystal and with gradient period**

123. ANDREEV A.L.<sup>1</sup>, ZALYAPIN N.V.

*National research nuclear university «MEPhI»*

<sup>1</sup>*Lebedev Physical Institute of the RAS, Moscow*

**Light modulation in helix-free ferroelectric liquid crystals**

124. LITVINOVA M.N., LITVINOVA V.A., DYATEL S.G.

*Far eastern state transport university, Khabarovsk*

**Characteristics of thermal imager on nonlinear crystals**

125. STROGANOVA E.V., GALUTSKIY V.V., ЮРОВА Н.А.  
*Kuban state university, Krasnodar*  
**Analysis of spectral characteristics of milk albumens at THz range**
126. ДАЙНЕКО С.В., ЗВАЙГЗНЕ М.А., ЛИНЬКОВ П.А., МАРТЫНОВ И.Л., ЧИСТЯКОВ А.А.  
*National research nuclear university «MEPhI»*  
**Преобразователи излучения синих светодиодов на основе полупроводниковых квантовых точек в матрице органического полимера**
127. KNIAZKOV A.V.  
*Saint-Petersburg state polytechnical university*  
**Measurements of the induced birefringence of electrooptical materials by means light reflection**
128. KULCHIN Yu.N.<sup>1</sup>, VITRIK O.B.<sup>1</sup>, KRAEVA N.P.<sup>1,2</sup>  
<sup>1</sup>*Institute of automation and control processes of FEB RAS, Vladivostok*  
<sup>2</sup>*Far eastern federal university, Vladivostok*  
**Real-time measurement of pectin particles diameter during their jellification by optical correlation technique**
129. NALEGAEV S.S., BUYANOVSKAYA E.M., PETROV N.V., BESPALOV V.G.  
*Saint-Petersburg national research university of information technologies, mechanics and optics*  
**Investigation of nonlinear optical properties of liquids for tasks of image recovery of objects**
130. BUT' A.I. LYALIKOV A.M.  
*Janka Kupala state university, Grodno, Belarus*  
**Exception of variable mistakes in interferometry of phase objects**
131. KOLESOV S.S., PAVLOV P.V., MALOV A.N.<sup>1</sup>  
*Air Forces academy named by prof. N.E. Zhukovsky and Ju.A. Gagarin, Voronezh*  
<sup>1</sup>*Irkutsk state medical university*  
**A detail surfaces diagnostics speckle method**
132. MALOV A.N., NEUPOKOEVA A.V.  
*Irkutsk state medical university*  
**The speckle-images analysis by a "chessboard" method**
133. KNIAZKOV A.V., KUKURICHKIN V.A.  
*Saint-Petersburg state polytechnical university*  
**Estimation coherency of laser radiation through the morphology speckle pictures**
134. ZAKHAROV M.S.  
*JSC «NeuroLab», Moscow*  
**Spectral analysis of cardio intervals obtained by photoplethysmography**
135. KRYUKOV N.A., PEGANOV S.A.  
*Saint-Petersburg state university*  
**On the regularization of the measurements of the speed of changes of physical quantities**
136. LESNICHII V.V.<sup>1,2</sup>, PETROV N.V.<sup>1</sup>, CHERYOMKHIN P.A.  
*National research nuclear university «MEPhI»*  
<sup>1</sup>*Saint-Petersburg national research university of information technologies, mechanics and optics*  
<sup>2</sup>*Albert Ludwig University of Freiburg, Freiburg in Breisgau, Germany*

- Создание методики измерения спектральных характеристик фотосенсоров цветных бытовых камер отдельно по каналам фильтра Байера**
137. BELOCONEV V.M., VOLCOV V.G., GINDIN P.D.  
*Scientific-production union «ALPHA», Moscow*  
**Combined night vision glasses**
138. ANUFRIK S.S., LYAVSHUK I.A., LYALIKOV A.M.  
*Janka Kupala state university, Grodno, Belarus*  
**The educational-laboratory stand for performance of practical works on various sections of coherent optics**
139. ORLOV V.V., PAVLOV A.V.  
*Saint-Petersburg national research university of information technologies, mechanics and optics*  
**Neural network model for volume superimposed holograms**
140. EVTIKHIEV N.N., KURBATOVA E.A., STARIKOV S.N., CHERYOMKHIN P.A.  
*National research nuclear university «MEPhI»*  
**Оценка качества оптического восстановления изображений с цифровых голограмм Френеля, выводимых на пространственно-временной модулятор света**
141. MALOV A.N.<sup>1</sup>, WOLF I.E.  
*Air Forces academy named by prof. N.E. Zhukovsky and Ju.A. Gagarin, Voronezh*  
<sup>1</sup>*Irkutsk state medical university*  
**A local glass defects diagnostics by computer-holographic method**
142. KYDRIAVTSEV P.V., MANUHIN B.G., ANDREEVA O.V.  
*Saint-Petersburg national research university of information technologies, mechanics and optics*  
**Temperature stability bulk polymer holograms in various conditions**
143. ZHERDEV A.Yu.<sup>1</sup>, ZLOKAZOV E.Yu., КОЛЮЧКИН В.В.<sup>1</sup>, LUSHNIKOV D.S.<sup>1</sup>, ODINOKOV S.B.<sup>1</sup>, СМИРНОВ А.В.<sup>2</sup>, STARIKOV R.S., ШВЕЦОВ И.А.<sup>1</sup>  
*National research nuclear university «MEPhI»*  
<sup>1</sup>*Bauman Moscow state technical university*  
<sup>2</sup>*Научно-производственное объединение «Криптен», Дубна*  
**Оценка качества мастер-матриц защитных голограмм с применением методов инвариантного корреляционного распознавания образов**
144. RODIN V.G., SOLYAKIN I.V., STARIKOV S.N., SHAPKARINA E.A.  
*National research nuclear university «MEPhI»*  
**Сравнение характеристик синтезированных голограмм Фурье и Хартли для использования в некогерентных оптических корреляторах**