



# CONFERENCE PROGRAM APCOM - 2016

**15<sup>th</sup> Asia-Pacific Conference  
on Fundamental Problems of Opto- and Microelectronics**

*to the memory of Professor V.I. Stroganov*

**Far-Eastern State Transport University  
Khabarovsk, Russia  
October 11-13, 2016**

## **Organized by**

Institute of Automation and Control Processes, Far-Eastern Branch of the  
Russian Academy of Sciences (Vladivostok, Russia);  
Far Eastern State Transport University (Khabarovsk, Russia)

## **Sponsored by**

Russian Foundation for Basic Research;  
Ministry of Education and Science of Khabarovsk Region

## **Supported by**

Society of Photo-Optical Instrumentation Engineers – SPIE

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Academician RAS Yuri N. Kulchin, FEB RAS, Russia

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#### **Conference Venue**

The APCOM-2016 conference will be held in the Far Eastern State Transport University (FESTU)

#### **Address**

47, Seryshev str., Khabarovsk, Russia

#### **How to get there**

from railway station by bus № 1Л, Stop "DVGUPS" (остановка «ДВГУПС»)

from airport by bus № 35, Stop "DVGUPS" (остановка «ДВГУПС»)

**11 October 2016 (Tuesday)**

09:00 – 10:00	<b>Registration of participants (the hall of the main FESTU building)</b>
<b>Opening of the conference (auditorium 204)</b>	
10:00 – 10:15	<b>Welcoming talk</b> <i>Conference Chair, Director of the IACP FEB RAS, Academician Yu.N.Kulchin</i>
10:15 – 10:30	<b>Welcoming talk</b> <i>Conference Co-Chair, Rector of the FESTU, Prof. Yu.A.Davydov</i>
10:30 – 11:00	<b>The life and work of Professor V.I.Stroganov</b> <i>Conference Co-Chair, Vice-rector of the FESTU, Prof. V.V.Krishtop</i>

11:00 - 11:15      Coffee break

**Section 1. New materials and structures for photonics. Section Chair: Prof. Yoshio Nikawa (auditorium 204)**

11:15 - 11:45 (invited talk)	<b>Advanced polymeric materials and nanotechnology: Synthesis and applications for opto- and microelectronics, electrochromism, highly selective dispersion of SWCNTs and solar energy</b> <i>Der-Jang Liaw, Chou-Yi Tsai, Po-I Wang, Qiang Zhang and Ying-Chi Huang</i> (Department of Chemical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan)
11:45 - 12:00	<b>Silicon-silicide nanostructures and p-i-n devices for photonics</b> <i>N.G. Galkin, K.N.Galkin, A.V.Shevlyagin, D.L.Goroshko, E.A.Chusovitin</i> (Institute for Automation and Control Processes FEB RAS, Vladivostok, Russia)
12:00 - 12:15	<b>Photonic sampled ADC's: state of the art</b> <i>R.S. Starikov</i> (National Research Nuclear University MEPhI / Moscow Engineering Physics Institute, Moscow, Russia)
12:15 - 12:30	<b>On the mechanism of luminescence from porous silicon nanostructures</b> <i>D.T.Yan, N.G. Galkin</i> (Far Eastern State Transport University, Khabarovsk, Russia; Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia)
12:30 - 12:45	<b>Ultraviolet and EELS spectra of CeO<sub>2</sub> nanoparticles produced by laser ablation</b> <i>M.A. Pugachevskii</i> (Far Eastern State Transport University, Khabarovsk, Russia)
12:45 - 13:00	<b>Formation of a bistable medium state in nanofluids under the influence of laser radiation</b> <i>A.I. Livashvili, V.V. Krishtop, Y.M. Karpets, N.M. Kireyeva</i> (Far Eastern State Transport University, Khabarovsk, Russia)

13:00 - 14:15 Lunch time

**Section 2. Micro and nanotechnologies for optoelectronics. Section Chair: Prof. V.V.Krishtop (auditorium 204)**

14:15 - 14:45 (invited talk)	<b>Localized atmospheric pressure plasma jet fine processing using a scanning nanopipette probe microscope</b> <i>Futoshi Iwata, Daisuke Morimatsu, Hiromitsu Sugimoto, Atsushi Nakamura, Akihisa Ogino, and Masaaki Nagatsu</i> (Research Institute of Electronics, Shizuoka University, Japan)
14:45 - 15:00	<b>Monte Carlo simulation of Raman confocal spectroscopy of beta-carotene solution</b> <i>I. Krasnikov, A. Seteikin, B. Roth and M. Meinhardt-Wollweber</i> (Amur State University, Blagoveshchenck, Russia; Hannover Centre for Optical Technologies, Hannover, Germany)
15:00 - 15:15	<b>Experimental verification of surface plasmon resonance excitation in bent single-mode optical fibers using whispering gallery modes</b> <i>A.V.Dyshlyuk, E.V.Mitsai, O.B.Vitrik, Y.N.Kulchin</i> (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia)
15:15 - 15:30	<b>The laser conoscopy of lithium niobate crystals of different composition</b> <i>Pikoul O.Y., Sidorov N.V., Teplyakova N.A., Palatnikov M.N.</i> (Far Eastern State Transport University, Khabarovsk, Russia; Tananayev Institute of Chemistry and Technology of Rare Elements and Mineral Raw Materials KSC RAS, Apatity, Russia)
15:30 - 15:45	<b>Hollow core Bragg fiber with antiresonant intermediate layer</b> <i>Y.A. Zinin, A.V. Panov, Y.N. Kulchin</i> (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia)

15:45 - 16:00 Coffee break

**Section 3. Informatics and computational methods. Section Chair: Prof. Der-Jang Liaw (auditorium 204)**

16:00 - 16:30 <b>(invited talk)</b>	<b>Numerical simulation studies for optical properties of biomaterials</b> <i>A.Seteikin, I.Krasnikov</i> (Amur State University, Blagoveshchenck, Russia)
16:30 - 16:45	<b>Numerical simulation of RF modulated optical pulses propagation in photonic time-stretch system</b> <i>V.A. Nebavskiy, R.S. Starikov, E.Yu. Zlokazov</i> , (National Research Nuclear University MEPhI / Moscow Engineering Physics Institute, Moscow, Russia)
16:45 - 17:00	<b>Simulation of nonlinear effects at laser modification of the surface minerals with gold</b> <i>Vanina E.A., Veselova E.M., Leonenko N.A.</i> (Amur State Medical Academy, Blagoveshchenck, Russia; Amur State University, Blagoveshchensk, Russia; Institute of Mining FEB RAS, Khabarovsk, Russia)
17:00 - 17:15	<b>Formation of the reflected and refracted S-polarized electromagnetic waves in the Fresnel problem for the boundary vacuum-metamaterial from the viewpoint of molecular optics</b> <i>B.B. Averbukh, I.B. Averbukh</i> (Pacific National University, Khabarovsk, Russia)
17:15 - 17:30	<b>Image segmentation algorithm in the system focusing digital camera</b> <i>S.V. Sai</i> , (Pacific National University, Khabarovsk, Russia)
17:30 - 17:45	<b>Azimuthal polarizer with phase shift for subwavelength focusing of laser light</b> <i>S.S. Stafeev, A.G. Nalimov, L. O'Faolain, M.V. Kotlyar, V.V.Kotlyar</i> (Image Processing Systems Institute, Samara, Russia; Samara State Aerospace University, Samara, Russia; School of Physics and Astronomy of the University of St. Andrews, Scotland, UK)

17:45 – 19:00            **POSTER SESSION (Hall)**

19:30 - 21:00           **Welcome reception (Hotel “Versailles”)**

**12 October 2016 (Wednesday)**

**Section 4. New materials and structures for photonics. Section Chair: Prof. R.S. Starikov (auditorium 204)**

9:00 - 9:30 <b>(invited talk)</b>	<b>Secondary structure and optical properties of ferroelectric lithium niobate crystals</b> <i>N.V. Sidorov, M.N. Palatnikov</i> (Institute of Chemistry and Technology of Rare Elements and Mineral Raw Material KSC RAS, Apatity, Russia)
9:30 - 9:45	<b>Influence of embedding of Mg<sub>2</sub>Si in a-Si matrix on solar cells properties</b> <i>K.N.Galkin, I.M.Chernev, A.V.Shevlyagin, Jiri Stuchlik, Zdenek Remes, Radek Fajgar and N.G.Galkin</i> (Institute of Automation and Control Processes of FEB RAS, Vladivostok, Russia)
9:45 - 10:00	<b>Interaction of moving domain walls with constant magnetic fields in iron borate and yttrium orthoferrite single crystals</b> <i>E.A.Zhukov, M.E.Adamova, O.Yu.Komina, A.V.Kaminsky, V.I.Zhukova</i> (Pacific National University, Khabarovsk, Russia; Far Eastern State Transport University, Khabarovsk, Russia)
10:00 - 10:15	<b>Effect of preparation conditions of calcium bismuthate based photocatalyst on its catalytic properties</b> <i>D.S.Shtarev, A.V.Shtareva, A.I.Blokh, A.V.Syuy</i> (Kosygin Institute of Tectonics and Geophysics FEB RAS, Khabarovsk, Russia; Far Eastern State Transport University, Khabarovsk, Russia)
10:15 - 10:30	<b>Application of pyrolitic method of synthesis for preparation of calcium</b>

	<b>bismuthate based photocatalyst</b> <i>D.S.Shtarev, K.S.Makarevich, A.V.Shtareva, A.I.Blokh, A.V.Syuy</i> (Kosygin Institute of Tectonics and Geophysics FEB RAS, Khabarovsk, Russia; Institute of Material Science FEB RAS, Khabarovsk, Russia; Far Eastern State Transport University, Khabarovsk, Russia)
10:30 - 10:45	<b>Light beams interaction with highly effective holographic diffraction structure formed in polymer-stabilized liquid crystal under the impact of arbitrarily spatially inhomogeneous electric field</b> <i>S.N.Sharangovich, A.O.Semkin</i> (Tomsk State University of Control System and Radioelectronics, Tomsk, Russia)

10:45 - 11:00 Coffee break

**Section 5. Acoustics, hydro-acoustics and seismo-acoustics. Section Chair: Prof. O.B.Vitrik (auditorium 204)**

11:00 - 11:15	<b>Diagnostics of sea earth's crust by means of low-frequency hydroacoustic radiators and coastal laser strainmeters</b> <i>V.A.Chupin, G.I.Dolgikh, A.V.Davidov</i> (V.I. Ilyichev Pacific Oceanological Institute FEB RAS, Vladivostok, Russia)
11:15 - 11:30	<b>Acoustic emission and magnification of atomic lines intensity originated by laser breakdown of salt water</b> <i>A.V. Bulanov, I.G. Nagorny</i> (V.I. Il'ichev Pacific Oceanological Institute FEB RAS, Vladivostok, Russia)
11:30 - 11:45	<b>Detecting weak acoustic fields by multichannel fiber-optical sensory system</b> <i>R.V.Romashko, M.N.Bezruk, D.V.Storozhenko, Y.N.Kulchin</i> (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia)
11:45 - 12:00	<b>Fiber-optic seismometers for weak seismic signals registration</b> <i>O.T.Kamenev, Yu.N. Kulchin, Yu.S. Petrov</i> (Institute for Automation and Control Processes of FEB RAS, Vladivostok, Russia)

12:00 - 13:00 Lunch time

13:00 - 13:15 Group Photo

13:15 - 21:00 Tour to Petropavlovka

**13 October 2016 (Thursday)**

**Section 6. Optoelectronics for life sciences. Section Chair: Prof. Makoto Kozaki (auditorium 204)**

9:00 - 9:30 (invited talk)	<b>Deep-UV plasmonics for high sensitive bio-imaging</b> <i>Yoshimasa Kawata, Masakazu Kikawada, Atsushi Ono, Wataru Inami</i> (Research Institute of Electronics, Shizuoka University, Japan)
9:30 - 9:45	<b>Local heating in biological body using wireless transmission power into small resonant devices driven by MRI</b> <i>Akitsugu Nakano and Yoshio Nikawa</i> (Graduate School of Engineering, Kokushikan University, Tokyo, Japan)
9:45 - 10:00	<b>Efficiency of use endobronchial laser Doppler flowmetry in patients with chronic leukemia</b> <i>E.A.Vanina, V.V.Voytsehovskiy, Y.S.Landyshev, S.I.Tkacheva</i> (Amur State Medical Academy, Blagoveshchenck, Russia; Amur Regional Hospital, Blagoveshchensk, Russia)
11:00 - 11:15	<b>Study on thin wideband applicator for detecting blood characteristics in human body</b> <i>Kazuki Bamba, Takao Kuki and Yoshio Nikawa</i> (Graduate School

	of Engineering, Kokushikan University, Tokyo, Japan)
11:15 - 11:30	<b>A NIRS study on activation in dorsolateral prefrontal cortex during mental rotation tasks</b> <i>Makoto Kozaki, Naoya Kawamura</i> (Dept. of Health and Medical Engineering, Kokushikan University, Tokyo, Japan)

11:30 - 11:45 Coffee break

**Section 7. New materials and structures for photonics. Section Chair: Prof. A.V. Syuy (auditorium 204)**

11:45 - 12:00	<b>Luminescent chemosensors for amines and ammonia based on Eu(III) chelate complexes</b> <i>A.A.Sergeev, S.S.Voznesenskiy, N.V.Petrochenkova, A.S.Shishov, A.A.Leonov, A.G.Mirochnik, Yu.N.Kulchin</i> (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia; Far Eastern Federal University, Vladivostok, Russia; Institute of Chemistry FEB RAS, Vladivostok, Russia)
12:00 - 12:15	<b>Hydrothermal Synthesis of TiO<sub>2</sub>/WO<sub>3</sub> Compositions And Their Photocatalytic Activity</b> <i>N.F.Karpovich, A.V.Zaitsev, K.S.Makarevich, S.A.Pyachin, A.A.Burkov, A.Yu.Ustinov</i> (Institute of Materials, KhSC, FEB RAS, Khabarovsk, Russia; Institute of Chemistry FEB RAS, Vladivostok, Russia)
12:15 - 12:30	<b>Laser fabricated plasmonic nanoantennas on polymer substrate</b> <i>A.Yu.Zhizhchenko, A.A.Kuchmizhak, O.B.Vitrik, Yu.N.Kulchin</i> (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia)
12:30 - 12:45	<b>E-beam Fabrication of Superhydrophobic Analyte Concentrator for SERS Analysis</b> <i>A.Yu.Zhizhchenko, A.V.Nepomnyasciy, O.B.Vitrik, and Yu.N.Kulchin</i> (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia)

13.00 - 14.00 Lunch time

**Section 8. Nonlinear optics. Section Chair: Prof. R.V. Romashko (auditorium 204)**

14:00 - 14:15	<b>Dynamic measurement of temperature dependent permittivity and permeability by microwave irradiation</b> <i>Yoshio Nikawa</i> (School of Science and Engineering, Kokushikan University, Tokyo, Japan)
14:15 - 14:30	<b>Laser excitation of transversal and longitudinal polar modes in lithium niobate and lithium tantalate crystals</b> <i>V.S.Gorelik, N.V.Sidorov, P.P.Sverbil</i> (Lebedev Physical Institute RAS, Moscow, Russia; Bauman Moscow State Technical University, Moscow, Russia; Tananaev Institute of Chemistry and Technology of Rare Elements and Mineral Raw Materials RAS, Apatity, Russia; Institute of Physics of the NASB, Minsk, Belarus)
14:30 - 14:45	<b>Formation and readout of holographic amplitude and phase non-uniform polarization gratings in polymer-stabilized liquid crystals</b> <i>S.N.Sharangovich, A.O. Semkin</i> (Tomsk State University of Control System and Radioelectronics, Tomsk, Russia)
14:45 - 15:00	<b>Investigation of the spectral lines intensity behavior in the optical breakdown on the water surfaces depend on the repetition rate and energy of the femtosecond laser pulses</b> <i>S.S.Golik, A.A.Ilyin, Yu.S.Biryukova, N.N.Golik, V.V. Lisitsa</i> (Far Eastern Federal University, Vladivostok, Russia)
15:00 - 15:15	<b>Optical radiation characteristics that affect the formation of large-scale and small-scale optical defects in photorefractive crystals</b> <i>V.A.Maksimenko, V.V.Krishtop</i> (Far Eastern State Transport University, Khabarovsk, Russia)

15:15 - 15:30	<b>Determination of electro-optic coefficients of lithium niobate crystal by polarization and interference methods</b> <i>A.V.Syuy, E.O.Kile</i> (Far Eastern State Transport University, Khabarovsk, Russia)
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15:30 - 15:45 Coffee break

**Section 9. Optoelectronic sensory and measurement systems. Section Chair: Prof. A. Seteikin (auditorium 204)**

15:45 - 16:00	<b>High spatial resolution absorption contrast imaging with electron-beam excitation assisted optical microscope</b> <i>Wataru Inami, Msahiro Fukuta, Yoshimasa Kawata, Susumu Terakawa</i> (Graduate School of Science and Technology, Shizuoka University, Japan; Research Institute of Electronics, Shizuoka University, Hamamatsu, Japan; Tokoha University, Shizuoka, Japan)
16:00 - 16:15	<b>Laser generation of ultrasound and ultrasonic velocity measurements in glasses</b> <i>P.V. Bazylev, I.Y. Krumgolz, V.A. Lugovoy</i> (VNIIFTRI, Far Eastern Branch, Khabarovsk, Russia)
16:15 - 16:30	<b>Novel UV probe for selective detection of Au Pd and Pt in aqueous solutions</b> <i>A.Mironenko, M.Tutov, A.Sergeev, S.Bratskaya</i> (Institute of Chemistry FEB RAS, Vladivostok, Russia; Far Eastern Federal University, Vladivostok, Russia; Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia)
16:30 - 16:45	<b>Diagnostics of nanosuspension by the light-induced pseudo-prism method</b> <i>V.I.Ivanov, G.D. Ivanova, V.I.Krylov, V.K.Khe</i> (Dept. of Physics and Theoretical Mechanics, Far Eastern State Transport University, Khabarovsk, Russia)
16:45 - 17:00	<b>Formation of surface plasmon polaritons by silver nano-strip and nano-circule</b> <i>E.S.Kozlova, V.V.Kotlyar</i> (Image Processing Systems Institute - Branch of the Federal Scientific Research Centre "Crystallography and Photonics" of Russian Academy of Sciences, Samara, Russia; Samara National Research University, Samara, Russia)

17:00 - 17:30 Closing Ceremony, Awarding for best presentations (auditorium 204)

18:00 - 20:00 Banquet (Hotel "Versailles")

## POSTER SESSION (Hall)

11 October 2016 17:45 – 19:00

- P1. **Light fields generated by an lc focusing device in different operational regimes** *S.P.Kotova, A.M.Mayorova, S.A.Samagin* (Samara Branch of Lebedev Physical Institute RAS, Samara, Russia; Samara National Research University, Samara, Russia)
- P2. **Thickness dependences of the output characteristics of the mixed holograms in photorefractive Bi<sub>12</sub>TiO<sub>20</sub> crystal** *A.V.Makarevich, V.V.Shepelevich, S.M.Shandarov* (I.P. Shamyakin Mozyr State Pedagogical University, Mozyr, Belarus; Tomsk State University of Control System and Radioelectronics, Tomsk, Russia)
- P3. **Generation of light fields with the rotation of the intensity distributions under propagation** *D.V.Prokopova, S.P.Kotova, N.N.Losevsky, E.V.Razueva*, (Samara Branch of Lebedev Physical Institute RAS, Samara, Russia)
- P4. **Optical encryption of digital data in form of quick response code using spatially incoherent illumination** *P.A.Cheremkhin, V.V.Krasnov, V.G.Rodin, R.S.Starikov*, (National Research Nuclear University MEPhI / Moscow Engineering Physics Institute, Moscow, Russia)
- P5. **Object recognition in non-coherent optical correlator based on DMD-modulator** *D.Yu.Molodtsov, V.G.Rodin* (National Research Nuclear University MEPhI / Moscow Engineering Physics Institute, Moscow, Russia)
- P6. **Correlation objects recognition using MINACE filters synthesized on a base of target object fragments images** *N.N.Evtikhiev, E.K.Petrova, D.V.Shaulskiy, R.S.Starikov, E.Yu.Zlokazov*, (National Research Nuclear University MEPhI / Moscow Engineering Physics Institute, Moscow, Russia)
- P7. **Crystallography method for protein solutions photomodification study** *A.N.Malov, A.V.Neupokoeva, A.Sh.Khamitova, N.O.Kiseleva* (Irkutsk State Medical University, Irkutsk, Russia)
- P8. **Protein solution photomodification analysis by means of craquelure structures** *A.N.Malov, A.V.Neupokoeva, A.N.Morozov, E.A.Timoshenko* (Irkutsk State Medical University, Irkutsk, Russia)
- P9. **The laser radiation action on the crystal formation processes in the biological fluids** *A.N.Malov, A.A.Vaichas, E.A.Novikova* (Military Educational and Scientific Center "N.E.Zhukovsky and Y.A. Gagarin Air Force Academy", Voronezh, Russia; Irkutsk Branch of Moscow State Technical University of Civil Aviation, Irkutsk, Russia; Irkutsk State Medical University, Irkutsk, Russia)
- P10. **Laser activation of a nutrient medium and antibiotic solutions and its estimation by of bacteria growth dynamics** *A.N.Malov, A.V.Neupokoeva, L.A.Kokorina, E.V.Simonova* (Irkutsk State Medical University, Irkutsk, Russia)
- P11. **Optical methods in diagnostics of liver fibrosis via blood observation** *M.V.Kruchinina, V.M.Generalov, V.V.Atuchin, V.N.Kruchinin, V.A.Volodin, A.A.Gromov, S.V.Rykhlytsky* (Institution of Internal and Preventive Medicine, Novosibirsk, Russia; State Research Center of Virology and Biotechnology VECTOR, Koltsovo, Russia; Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia; Tomsk State University, Tomsk,



Russia; Novosibirsk State University, Novosibirsk, Russia; Tyumen State University, Tyumen, Russia)

- P12. **Complex research of the particles which cause air pollution by laser granulometry, Raman-spectrometry and IR-spectrometry** *A.S.Kholodov, K.S.Golokhvast* (Far Eastern Federal University, Vladivostok, Russia; Institute of Medical Climatology and Rehabilitative Treatment, Vladivostok Branch of the Far Eastern Center of Physiology and Pathology of Respiration, Vladivostok, Russia)
- P13. **The light induced mechanism of the bubble clusters formation** *A.A.Kuzin, V.I.Ivanov, G.D.Ivanova, Yu.M.Karpets* (Far Eastern State Transport University, Khabarovsk, Russia)
- P14. **Excitonic optical nonlinearity of dielectric nanocomposites in weak optical fields** *D.V.Storozhenko, V.P.Dzyuba, Yu.N.Kulchin, A.V.Amosov* (Institute of Automation and Control Processes, FEB RAS, Vladivostok, Russia)
- P15. **Excitons and low-threshold optical nonlinearity of dielectric nanosystems** *V.P.Dzyuba, A.V.Amosov, Yu.N.Kulchin* (Institute of Automation and Control Processes, FEB RAS, Vladivostok, Russia)
- P16. **The optical absorption by excitons of a quasi-zero dielectric quantum dot** *V.P.Dzyuba, S.I.Pokytynyi, A.V.Amosov, Yu.N.Kulchin* (Institute of Automation and Control Processes, FEB RAS, Vladivostok, Russia; Chuiko Institute of Surface Chemistry NASU, Kuiv, Ukraine)
- P17. **Transient grating in the transparent nanoliquid** *A.V. Myagotin, G.D.Ivanova, V.I.Ivanov* (Far Eastern State Transport University, Khabarovsk, Russia)
- P18. **Light induced lens response in a liquid nanosuspension** *V.I.Ivanov, G.D.Ivanova, V.K.Khe* (Far Eastern State Transport University, Khabarovsk, Russia)
- P19. **Optical diagnostic of the mass transport phenomena in two-phase liquid** *A.A.Kuzin, Yu.M.Karpets, V.I.Ivanov* (Far Eastern State Transport University, Khabarovsk, Russia)
- P20. **The compact printed microwave filters for wireless communication applications** *V.V.Atuchin, D.A.Buhtiyarov, A.P.Gorbachev* (Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia)
- P21. **Simulation of internal charge distribution and spatial charge characteristics of ferroelectrics irradiated by focused electron beam** *A.V.Pavelchuk, A.G.Maslovskaya* (Amur State University, Blagoveshchensk, Russia)
- P22. **A testing method for the machine details state by means of the speckle image parameters analysis** *P.V.Pavlov, A.N.Malov, A.V.Neupokoeva, F.N.Popov* (Military Educational and Scientific Center "N.E.Zhukovsky and Y.A. Gagarin Air Force Academy", Voronezh, Russia; Irkutsk State Medical University, Irkutsk, Russia)
- P23. **Optimization of the fiber laser parameters for local high-temperature impact on metal** *D.S.Yatsko, M.V.Polonik, O.V.Dudko* (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia)
- P24. **Determination of Li<sub>2</sub>O content in the LiNbO<sub>3</sub> single crystals by using the second harmonic spectrum** *V.A.Pogodina, M.N.Litvinova, V.A.Litvinov, Yu.M.Karpets, I.V.Povkh* (Far Eastern State Transport University, Khabarovsk, Russia)

- P25. **Collinear and vector interaction of light waves in nonlinear optical crystals  $\text{KTiOPO}_4$  ("KTP"),  $\text{Ba}_2\text{NaNb}_5\text{O}_{15}$  ("banana")** *N.A.Deinekina, I.A.Korosteleva, O.V.Kravchenko, D.S.Faleev* (Far Eastern State Transport University, Khabarovsk, Russia)
- P26. **An influence of formation methods of laser layer's welding on their phase composition and magnetic properties** *N.G.Galkin, Y.N.Kulchin, E.P.Subbotin, A.I.Nikitin, D.S.Yatsko, M.E.Stebliy* (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia)
- P27. **Magnetic properties and magnetic structure of Sm-Fe alloys on Al based substrates** *N.G.Galkin, Y.N.Kulchin, M.E.Stebliy, E.P.Subbotin, A.I.Nikitin, D.S.Yatsko* (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia)
- P28.  **$\text{Mg}_2\text{Si}_x\text{Sn}_{1-x}$  heterostructures on Si(111) substrate for optoelectronics and thermoelectronics** *N.G.Galkin, K.N.Galkin, S.A.Dotsenko, I.M.Chernev, L.Dózsa, B.Pécz, Z.Osváth, Zs.Zolnai* (Institute of Automation and Control Processes Far Eastern Branch of Russian Academy of Sciences, Vladivostok, Russia; Institute of Technical Physics and Materials Research, Centre for Energy Research, Hungarian Academy of Sciences, Budapest, Hungary; Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus; Wroclaw University of Technology, Wroclaw, Poland)
- P29. **Photoelectric element on the basis of the sandwich metal-ferroelectric-metal structure** *V.I.Ivanov, Yu.M.Karpets, Yu.O.Perkov* (Far Eastern State Transport University, Khabarovsk, Russia)
- P30. **Optical and microstructural properties of scheelite-type  $\text{CaLn}_2(\text{MoO}_4)_4$ -based phosphors** *Chang Sung Lim, M.S.Molokeev, V.V.Atuchin* (Department of Advanced Materials Science & Engineering, Hanseo University, Seosan, Korea; Institute of Semiconductor Physics, SB RAS, Novosibirsk, Russia; Kirensky Institute of Physics Federal Research Center KSC Siberian Branch Russian Academy of Sciences, Krasnoyarsk, Russia)
- P31. **Nonlinear optical frequency conversion on the periodic structures in lithium niobate crystals and silica fibers** *V.A.Pogodina, M.N.Litvinova, V.A.Litvinov, Yu.M.Karpetz*, (Department of Physics and Theoretical Mechanics, Far Eastern State Transport University, Khabarovsk, Russia)
- P32. **Structure disorder and photorefractive properties of  $\text{LiNbO}_3\text{:Zn}$  crystals** *N.V.Sidorov, M.N.Palatnikov, N.A.Teplyakova, A.A.Yanichev, R.A.Titov* (I.V.Tananaev Institute of Chemistry and Technology of Rare Elements and Mineral Raw Materials KSC RAS, Apatity, Russia)
- P32. **Structure disorder and photorefractive properties of  $\text{LiNbO}_3\text{:B}$  crystals** *N.V.Sidorov, M.N.Palatnikov, N.A.Teplyakova, A.A.Yanichev, R.A.Titov* (I.V.Tananaev Institute of Chemistry and Technology of Rare Elements and Mineral Raw Materials KSC RAS, Apatity, Russia)
- P34. **Concentration waves of switching in nanofluids under a light field** *A.I.Livashvili, V.V.Krishtop, Yu.M.Karpets, N.M.Kireeva* (Far Eastern State Transport University, Khabarovsk, Russia)

- P35. **Interaction of the laser beam with irregular wavefront and photorefractive crystal** *V.A.Maksimenko, V.V.Krishtop* (Far Eastern State Transport University, Khabarovsk, Russia)
- P36. **The mode field model of a few-mode optical fibers with different characteristics of the radiation input** *I.N.Smelikova, O.V.Skobletskaaya* (Far Eastern State Transport University, Khabarovsk, Russia)
- P37. **Electro-optical modulation broadband radiation IR spectral range** *P.S.Goncharova, A.V.Syuy, V.V.Krishtop* (Far Eastern State Transport University, Khabarovsk, Russia)
- P38. **Direct laser welding of Sm and Fe powders for creation of magnetic alloys on the stainless steel substrate: microstructure and magnetic properties** *N.G.Galkin, Y.N.Kulchin, E.P.Subbotin, A.I.Nikitin, D.S.Yatsko, A.A.Kostyanko, D.C.Pivovarov* (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia)
- P39. **Structure and magnetic properties of alloys formed by the laser welding of Sm and Co powders on different substrates** *N.G.Galkin, Y.N.Kulchin, E.P.Subbotin, A.I.Nikitin, D.S.Yatsko, A.A.Kostyanko* (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia)
- P40. **The diffraction of light waves on periodically poled domain structure in lithium niobate crystal** *S.M.Shandarov, A.E.Mandel, A.V.Andrianova, G.I.Bolshanin, M.V.Borodin, A.Yu.Kim, S.V.Smirnov, A.R.Akhmatkhanov, V.Ya.Shur* (Department of Electronic Devices, Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia; Ural Federal University, Ekaterinburg, Russia)
- P41. **Optical dispersion of diamond and quartz** *T.Kh.Khasanov* (Optical Materials and Structures Laboratory, A.V. Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia)
- P42. **Photonic lattices formed in photorefractive lithium niobate by Bessel-like optical fields** *A.Inyushov, P.Safronova, I.Trushnikov, V.Shandarov* (Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia)
- P43. **Measurement of an ambient air leak by diode laser absorption spectroscopy** *A.K.Chernyshov, P.A.Mikheyev* (Lebedev Physical Institute, Moscow, Russia; Samara National Research University, Samara, Russia)
- P44. **Conversion of broadband IR radiation and structural disorder in lithium niobate single crystals with low photorefractive effect** *M.N.Litvinova, A.V.Syuy, V.V.Krishtop, V.A.Pogodina, Yu.V.Ponomarchuk, N.V.Sidorov, A.A.Gabain, M.N.Palatnikov, V.A.Litvinov* (Far Eastern State Transport University, Khabarovsk, Russia; I.V.Tananaev Institute of Chemistry and Technology of Rare Elements and Mineral Raw Materials KSC RAS, Apatity, Russia; Moscow Institute of Physics and Technology, Dolgoprudny, Russia)
- P45. **Features of extraordinary beam propagation in an optically anisotropic birefringent prism** *Ia.Zisser, I.Zisser* (Sol International Railroad Integrated System Dept., Woosong University, Daejeon, Korea; Far Eastern State Transport University, Khabarovsk, Russia)
- P46. **Non-contact monitoring of thermoregulation in live biological tissues by optical blood pulsation imaging technique** *A.A.Kamshilin, A.V.Belaventseva, R.V.Romashko, Yu.N.Kulchin, O.V.Mamontov* (ITMO University, Saint-Petersburg, Russia; Institute of

Automation and Control Processes FEB RAS, Vladivostok, Russia; Almazov Federal Heart, Blood and Endocrinology Center, St. Petersburg, Russia)

- P47. **A database of inorganic minerals found in living organisms worldwide** *I.E.Pamirsky, S.A.Gutnikov, K.S.Golokhvast* (Far Eastern Federal University, Vladivostok, Russia)
- P48. **New data about optic properties of biominerals from some brown algae *Undaria pinnatifida* and *Laminaria japonica*** *I.E.Pamirsky, G.Chung, S.A.Gutnikov, K.S.Golokhvast* (Far Eastern Federal University, Vladivostok, Russia; Chonnam National University, Yeosu, Chonnam, Korea)
- P49. **Studying of welding aerosol using laser granulometry** *K.Yu.Kirichenko, A.V.Gridasov, V.A.Drozd, K.S.Golokhvast* (Far Eastern Federal University, Vladivostok, Russia)
- P50. **Orthogonal three-wave mixing in InP crystal** *R.V.Romashko, M.A.Asalkhanova, Yu.N.Kulchin* (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia; Far Eastern Federal University, Vladivostok, Russia)
- P51. **Highly-sensitive two-channel laser acoustic sensor** *R.V.Romashko, T.A.Efimov, Yu.N.Kulchin* (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia; Far Eastern Federal University, Vladivostok, Russia)
- P52. **Fiber-optic hydrophone based on adaptive holographic interferometer** *R.V.Romashko, S.A.Ermolayev, M.N.Bezruk, Yu.N.Kulchin* (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia; Far Eastern Federal University, Vladivostok, Russia)
- P53. **Mobile fiber-optic system for seismic monitoring** *O.T.Kamenev, Yu.S.Petrov, R.V.Khiznyak, R.V.Romashko* (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia; Far Eastern Federal University, Vladivostok, Russia)
- P54. **Visualization of oscillatory stresses in transparent media using a  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> adaptive detector** *M.A.Bryushinin, I.A.Sokolov, A.M.Balbashov* (Ioffe Institute, St. Petersburg, Russia; Power Engineering Institute, Moscow, Russia)
- P56. **Multi-frequency fluorometer for operational environmental monitoring of marine areas** *P.A.Salyuk, I.G.Nagorniy, A.V.Bulanov* (V.I.II'ichev Pacific Oceanological Institute; Vladivostok, Russia; Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia; Far Eastern Federal University, Vladivostok, Russia; Far Eastern Federal University, Vladivostok, Russia)
- P57. **Formation of waveguide circuits by bright spatial solitons in lithium niobate** *A.S.Perin, V.Yu.Ryabchenok, V.M.Shandarov* (Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia)
- P58. **Mesoporous 1-D photonic crystalline films of aluminium oxide as sensitive sensors of molecular compounds** *V.S.Gorelik, M.S.Ashurov* (Lebedev Physical Institute RAS, Moscow, Russia)
- P59. **Accelerating space-charge gratings in wide-bandgap semiconductors as a tool for simultaneous velocity and acceleration measurement** *M.A.Bryushinin, I.A.Sokolov* (Ioffe Institute, St. Petersburg, Russia; Power Engineering Institute, Moscow, Russia)

- P60. **Optical modes structure in waveguide based on GaN** *R.V.Romashko, V.A.Kolchinskiy, Ikai Lo, Yu.N.Kulchin* (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia; National Sun-Yat Sen University, Taipei, Taiwan)
- P61. **Optical modes structure in dielectric Bragg waveguide** *R.V.Romashko, A.B.Cherepakhin, Yu.N.Kulchin* (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia)
- P62. **Photo-alignment optical structure based on azo-dye and liquid crystal** *R.V.Romashko, A.B.Cherepakhin, Yu.N.Kulchin, A.A.Murauski, A.A.Muravsky* (Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia; Far Eastern Federal University, Vladivostok, Russia; Institute of Chemistry of New Materials NASB, Minsk, Belarus)