Time	Session/presentation	Session/presentation
	1 track	2 track
	12 October	
8:00-10:00	Registration	
10:00-12:00	Opening ceremony/Plenary session	
12:00-12:30	Break	
12:30-14:00	**Session A1. Fiber-optic cables**	**Session B1. Fiber-optic communications – I**
12:30-12:45 12:45-13:00	**A1-1. Current state and prospects of development of fiber-optical cables in the world and the CIS countries (Invited)** Meschanov G.I.(1) *(1) JSC VNIIKP* In the report presents data and analyze the main trends in the production of optical fiber and optical fiber cables, based on a common information model community.	**B1-1. Zero Touch Photonic solutions for the prospective telecommunication networks (Invited)** Semyon S. Kogan *ZAO Alcatel-Lucent , Saint-Petersburg, Russia* The evolution to the intelligent photonic networks with dynamic routing of the optical connections based on GMPLS protocols was made possible as a result of the evolution from fixed (FOADM) to reconfigurable (ROADM) and, finally, the tunable/reconfigurable (TOADM)N-Degree add/drop multiplexers. In a modern DWDM transport network consolidation of flows received via 1GE & 10GE & 40G & 100G physical interfaces of service routers in a high-speed optical channels 40 and 100Gbps produced on the electrical level based on a standardized principles and structures of Optical Transport Hierarchy (OTH). It should be expected that in the coming years DWDM systems with a capacity of up to 8 - 10Tbps over a single fiber, the spectral efficiency of 2 bits / s / Hz and a range of transmission of several thousand kilometers will be requested around the world. Company Alcatel-Lucent has already implemented such kind Zero Touch Photonic concept for DWDN systems on the industrial scale.
13:00-13:15	**A1-2. Calculation of seismic resistance optic cables, for different methods of laying** Koryakin A.G.(1) Larin U.T.(1) *(1) Russian cable scientific and development institute JSC VNIIKP Moscow, Russia* In work calculations of seismic stability of optical cables are resulted under different conditions of a laying . The basic optical designs which are exposed to seismic influences, and as some private questions of the calculation, layings of optical cables concerning chances in premises of nuclear stations are considered.	**B1-2. Modelling high-bit-rate telecommunication links (Invited)** Fedoruk M.P.(1) *(1) Institute of Computational Technologies Siberian Branch of RAS* The report provides an overview of mathematical models and numerical algorithms for computational modeling of high-bit-rate optical communication lines. The examples of modeling fiber links of interest for practical applications are presented
13:15-13:30	**A1-3. Optical cables in telecommunications** Vorontsov A.S. *Russian cable scientific research and development institute (VNIIKP ,JSC), Moscow*	

13:30-13:45	**A1-4. RADIATION-RESISTANT OPTICAL CABLE** Dolgov I.I.[1*], Larin Y.T.[2] *[1]LLC "Ivan Dolgov Laboratory" ("IDL" LLC)* *[2]JSC "Russian Cable Research and Development Institute" (VNIIKP, JSC)* The principles of creation of radiation-resistant communications and control systems and fiber-optic cable (RR FOC) to work in the fields of ionizing radiations of different nature and with arbitrary dependence on the time of dose rate over the full operating temperature range. Presents the results of preliminary studies and calculations patented construction of RR FOC.	**B1-3. Simulation of 1000-km 40-Gbit/s Differential Phase-shift Keying Transmission System** Redyuk A.A. (1), Shtyrina O.V. (1), Nanii O.E. (2,3), Kapin Ju.A. (3), Sachalin E.A. (3), Titov Je.B. (3), Treschikov V.N. (3), Jaryshkin A.A. (3), Fedoruk M.P. (1,4) *(1) Institute of Computational Technologies, Novosibirsk, (2) Moscow State University, Moscow, (3) T8 LLC., Moscow, (4) Novosibirsk State University, Novosibirsk* The performance of 1000-km 40-Gbit/s non-return-to-zero differential phase-shift keying (NRZ DPSK) transmission system is analyzed numerically and experimentally. We investigate the dependence of bit-error rate on residual dispersion and demonstrate a good agreement between numerical simulations and experimental results.
13:45-14:00	**A1-5. Results of localization of high PMD sections on fiber optical communication lines** Dashkov M.V. *Povolzhskiy State University of Telecommunications and Informatics, Samara* The results of field inspection of fiber optical communication lines including measurements of chromatic dispersion and polarization mode dispersion are represented. Specificities of localization of fiber section with high level of polarization mode dispersion using PODTR are noted.	**B1-4. ANALYSIS OF MODULATION FORMATS FOR 40 G DWDM COMMUNICATION SYSTEMS** Naniy O.E. (1,2), Treshchikov V.N. (1) *(1)T8 Ltd., Moscow (2)Moscow Lomonosov University, Moscow* The report provides a comparative analysis of modulation formats promising for DWDM systems with channel capacity 40 Gbps. Concluded that the adaptive differential phase format NRZ ADPSK is the most optimal format for use in heterogeneous communication networks with channel speeds of 10 Gbps and 40 Gbps. This conclusion is confirmed by the tests of a heterogeneous 80-channel DWDM system with 1200 km length (12x100 km).
14:00-15:00	Lunch	
15:00-16:45	**Session A2. Fiber-optic sensors – I**	**Session B2. Fiber-optic communications – II**
15:00-15:15 15:15-15:30	**A2-1. A multiplexed fiber optic sensors based on microoptomechanical resonant structures (Invited)** Egorov F.A (1) Potapov V.T (1) *(1) Fryasino branch of the Institution of Russian academy of sciences Kotelnikov Institute of Radio Engineering and Electronics of RAS* Multichannel fiber optic measurement systems with frequency separation of channels are investigated.These systems are based on the resonant interaction between optical fiber laser and microoptomechanical structures-sensitive elements of sensors.Fiber optic sensor (FOS) schemes are proposed that are integrated in a single optical fiber and contain resonant sensitive elements of sensors based on special optical fibers.FOS schemes on pump-modulated fiber lasers are considered, and the possibility of increasing the sensitivity of FOSs under the parametric resonance conditions F=2Frel(Frel is the frequency of relaxation oscillations of a laser) is demonstrated.	**B2-1. Potential possibility of dispersion managed solution application for optical fiber link upgrade (Invited)** Burdin V.A. (1) Volkov K.A. (1) Dashkov M.V. (1) *(1) SEIHPE Povolzhskiy State University of Telecommunications and Informatics, Samara* There are some methods of dispersion management for optical fiber link upgrade are considered. Based on nonlinear Schrodinger equation with varying coefficients solving by analytic, variational and split-stop methods analysis of such upgrade realization are presented.

15:30-15:45	**A2-2. Fiber-optic sensor of the displacement with linear positional feature on the base of multicomponent optical structure** Matyunin S.A. (1) Stepanov M.V. (2) *(1) Samara State Aerospace University (2) FSUE SRPSRC TsSKB-Progress* In this article structure of the fiber-optic sensor of the displacement is considered. Expression is received for linearization of the positional feature.	**B2-2. A data encoding method for an optical fibre link** Skidin A.S., Fedoruk M.P., Shafarenko A.V. *(1) Institute of Computational Technologies, Novosibirsk; (2) Novosibirsk State University, Novosibirsk; (3) University of Hetfordshire, Hatfield, UK.* We propose an adaptive constrained code for mitigation of the patterning effects and demonstrate that this approach can substantially reduce the bit error rate (BER) even for very large values of the channel BER (BER>0.1). The proposed technique can be used in combination with forward error correction schemes (FEC) to extend the range of channel BERs that an FEC scheme is effective over.
15:45-16:00	**A2-3. Sparkadvance selector based on fiber-optic fuel quality sensor** Sadykov I.R. (1) Morozov O.G. (1) Sadeev T.S. (1) *(1) Tupolev Kazan state technical university* The possibility of construction of the octane number and alcohol content monitoring sensor, based on π-shifted fiber Bragg gratings utilizing, is considered	**B2-3. Using Coherent OTDR for protection cabling infrastructure of optical communication lines** Nesterov E.T.(1), Ozerov A.Z.(1), Naniy O.E.(1,2), Treshchikov V.N.(1) *(1) T8 , Moscow (2) Lomonosov Moscow State University* The report presents the experimental results of the first Russian device based on coherent OTDR Dunay for protection of fiber optic cable`s infrastructure. Developed device can detect an almost any construction work near the fiber-optic cable.
16:00-16:15	**A2-4. Optically powered fiber-optic voltage transformer** Sokolovskiy A.A. (1,2) Sidorov S.V. (2) Kramskoy U.G. (2) *(1)Institute of Radioegeneering and Electronics by name V.A. Kotelnikov RAS, Fryazino (2) ZAO Profotech , Moscow* Tecnical parameters of the optically powered fiber-optic voltage transformer are described. Accuracy of mearsurement of the amplitude and phase high voltage (110-330kV)corresponds 0.2%.	**B2-4. THE ANALYSIS OF NONLINEAR EFFECTS IN DWDM COMMUNICATION SYSTEMS WITH DIVERSE CHANNELS (40G, 10G; DPSK, ASK)** Kapin Y.A., Naniy O.E., Novikov A.G., Pavlov V.N., Plaksin S.O., Treshchikov V.N., Ubaidullaev R.R. *T8 Company, Moscow* It is necessary to expect that in DWDM systems with diverse channels character of nonlinear distortions essentially differs from one in homogeneous systems 10G/40G. Experimental researches of mechanisms of influence on the used channel 40G DPSK from the adjacent channels 10G ASK (the frequency plan of 50 GHz and 100 GHz) are made in the report. Also two questions under investigation are the character of accumulation of nonlinear effects in 40G DPSK line and optimal control of dispersion in 40G DPSK line systems.
16:15-16:30	**A2-5. Experiments on creation of the reinforced optical sensors for control of gas pipeline integrity** Kindras M.A. (1), Kuzub S.G. (2), Larin Yu.T.(3) *(1)Ltd. VNIIKP-OPTIC Moscow, (2) CJSC NTC Optical fiber , Saint Petersburg, (3) OJSC VNIIKP , Moscow* This report gives data about experiments on creation of the reinforced optical sensors for control of gas pipeline integrity. Possibilities of optical sensors on a basis of Bragg grid are described.	**B2-5. Suppression of nonlinearity in high-bit-rate DPSK fibre linrs with optical phase conjugation** Shapiro E.G., Fedoruk M.P. *(1)Institute of Automation and Electrometry Siberian Branch of Russian Academy of Science, Novosibirsk, (2)Institute of Computational Technologies Siberian Branch of Russian Academy of Science,Novosibirsk* In the work the results of direct nimerical modelling of error statistic in DPSK fiber link with optical phase conjugation are presented. It is shown that an increase in the number of devices optical phase conjugation reduces the probability of detecting errors at the receiving device if the number of devices does not exceed a certain value. Further increase leads to a sharp deterioration in the quality of the signal at the receiver.
16:30-17:00	Break	

17:00-18:15	**Session A3. Fiber-optic sensors – II**	**Session B3. Fiber-optic communications – III**
17:00-17:15 17:15-17:30	**A3-1. Physical basics of development of fiber-optical adaptive measurement systems with ultrahigh sensitivity based upon dynamical holograms (Invited)** Kulchin Yu.N.(1), Romashko R.V. *Insitute of Automation and Control Processes of FEB RAS* The work deals with features of development of fiber-optical adaptive measurement systems with ultrahigh sensitivity which are based upon dynamical holograms. Metrological characteristics of the systems proposed as well as features of their practical application are investigated. The advantages of the described schemes in comparison with convenient measurement systems based upon fiber-optical elements are demonstrated.	**B3-1. RUSSIAN DEVELOPMENT OF HIGH SPEED DWDM COMMUNICATION SYSTEMS (Invited)** Treshchikov V.N. *T8 Company, Moscow* Russian DWDM equipment PUSK is not inferior to and in a number of parameters surpasses the similar equipment of leading foreign manufacturers. The total cable length of DWDM networks, we have built thus far, exceeds 35000 km which is about 7 % of the whole length of DWDM networks in Russia. In 2011 our company has successfully demonstrated fiber optic 80 channel PUSK DWDM system with 40 Gbps per channel for transmission on 1200 km.
17:30-17:45	**A3-2. Excitation of surface plasmon resonance by whispering gallery mode in a curved optical fiber** Kulchin Yu.N., Vitrik O.B., Dyshlyuk A.V. *Institute for Automation and Control Processes FEB RAS* We present a novel refractometry technique for liquid media based on excitation of surface plasmon resonance (SPR) on the metal-coated outer boundary of a bent single mode optical fiber by whispering gallery mode (WGM). The signal read-out is done through the measurement of spectral interference pattern of WGM and the fundamental mode at the end of the bent section of the fiber. The theoretical spectral sensitivity of the technique is shown to reach as high as ~1800 μm/refractive index unit (RIU) with the smallest detectable refractive unit change approaching 10^-8 RIU	**B3-2. Decision threshold optimization in optical communication systems** Plaksin S. O. (1), Naniy O. E. (2), Repkin A. A. (3), Treshchikov V. N. (4) *(1) Lomonosov MSU, OOO T8 , Moscow, (2) Lomonosov MSU, OOO T8 , Moscow, (3) OOO T8 , Moscow, (4) OOO T8 , Moscow* The influence of decision treshold (RxDT - RxDT - Receiver Decision Threshold) on bit error ratio and optimization of the threshold depending on the data format and the presence of linear and nonlinear distortions were ivestigated in this paper. The influence of strong optical filtering on the bit error ratio and on the decision threshold was analized.
17:45-18:00	**A3-3. System of amplitude measurements of physical quantities based on fiber Bragg gratings** Denisenko P. E., Morozov O.G., Sadeev T.S. *A. Tupolev Kazan State Technical University* The report considers possibility of using a system based on amplitude measurement method with a fiber Bragg grating as a sensitive element. The features of measurement technique and application of Bragg gratings with a special structure for different industries.	**B3-3. INFORMATION CHANNELS OF WDM SYSTEMS WITH PHASE STRUCTURED FBG** Aliushina S.G.(1), Denisenko P.E. (2), Morozov O.G. (2,3), Sadykov I.R.(2), Sadeev T.S.(2,3) *(1) Technical School of Electrical Telecommunication, Cheboksary (2) Tupolev State Technical University, Kazan (3) Povolgskii State University of Telecommunication and Informatics (Kazan Branch), Kazan* In this paper, we consider the synthesis of fiber Bragg gratings with a phase pi-shift, the model normalization and the formation of a triangular spectrum, the structuring of Cantor sets principle and their applications in WDM systems information channels.

18:00-18:15	**A3-4. ALL-FIBER ELECTRIC CURRENT SENSOR ON MICROSTRUCTURED SPUN FIBER** Chamorovskiy Yu.K.(2), Starostin N.I.(1), Sazonov A.I.(1), Prjyalkovskiy Ya.V.(2),Morshnev S.K.(1), Gubin V.P.(1), Boev A.I(2). *(1)Fryazino branch of the Institution of Russian academy of sciences Kotel nikov Institute of Radio Engineering and Electronics of RAS1 (Kotel nikov FIRE RAS) (2)close corporation Profotech, Moscow* A new optical scheme of an interferometer for a current sensor has been suggested. The basic elements of interferometer (a phase modulator, a connecting bifilar line and a sensing coil) are made on base of a microstructured spun fiber. The Phase modulator includes a fiber coil located in a magnetic field of a solenoid with modulating current. The Modulator provides a direct modulation and so does not demand of delay line. The results of experimental researches of a suggested scheme are presented. An interference of modulator and sensing coil through optical circuit is discovered in such scheme. The processing algorithm of output interferometer signal is offered for minimization of this effect.	**B3-4. On the training of specialists in the field of optical communication in SibSUTI** Zaslavsky K.E. (1) Gorlov N.I. (2) *Siberian State University of Telecommunications and Informatics, Novosibirsk city* The experience of training specialists in the field of optical communications at the Siberian State University of Telecommunications and Informatics. A brief information about the material base and the bases of the passage of industrial practice.
19:00	Reception	

	13 October	
8:30-10:00	**Session A4. Fiber-optic sensors – III**	**Session B4. Optical fibers and components – I**
8:30-8:45 8:45-9:00	**A4-1. Fiber optoelectronic devices for detection of impurities and atmospheric gases on the base near-infrared diode lasers (Invited)** Ia.Ia. Ponurovskiy *A.M. Prokhorov General Physics Institute of RAS 38 Vavilov str., 119991 Moscow, Russia e-mail: jak@nsc.gpi.ru* Describes of the some questions to use diode lasers with fiber radiation output for ecology, medicine and industries	**B4-1. ELLIPTICAL POLARIZATION MODES IN OPTICAL FIBERS (Invited)** Morshnev S.K.(1), Chamorovskii Yu.K.(1,2) *(1)Kotelnikov Institute of Radio-engineering and Electronics of RAS, Fryazino. (2)PROFOTEX, Moscow.* The propagation of elliptical polarized modes in spun-fibers, including microstructured fibers is considered. The spun-fibers are promising for application in magnetic field sensors or current sensors, due to a Faraday effect accumulation with length of a fiber. The model of a screw helical structure of axes of a linear birefringence built-in in a spun-fiber, is used. The built-in circular birefringence is not taken into account. It is shown, that application of elliptic polarization states at the inlet in a sensing device allows to increase the sensors sensitivity to a magnetic field for both conventional and microstructured spun-fibers.
9:00-9:15	**A4-2. Application possibility of optical fiber sensors for graphite columns temperature and deformation control of an RBMK-1000 nuclear reactor** O.V.Butov (1), K.M.Golant (1), A.V.Lanin (1), I.A.Shevtsov (2), A.N.Fedorov (2), V.V.Shushlebin (3) *(1) V.A.Kotel nikov Institute of Radio Engineering and Electronics of RAS (2) Prolog Co.,Ltd. (3) JSC Institute of nuclear materials* High temperature Bragg gratings were written in a nitrogen-doped-silica-core radiation-resistant optical fiber. Their application possibility in principle as a graphite columns temperature and deformation sensors for an RBMK-1000 nuclear reactor was investigated in the IYR IVV-2M nuclear reactor core environment. The experiments were performed at the average neutron flux of 6.2x1013 cm(-2) c(-1) (E > 1 MeV) and the gamma-photon flux of 9.3x1014 cm(-2) c(-1) in the central part of the reactor core at the temperature of 400-600 0C.	**B4-2. Anisotropic single mode optical fiber with elliptical F-P2O5-SiO2 cladding** Андреев А. Г.(1),Буреев С. В.(2), Дукельский К. В.(2), Ермаков В. С.(1), Ероньян М. А.(2), Комаров А. В. (2), Полосков А. А.(1), Цибиногина М. К.(1) *(1)OAO Perm Research and Production Instrument Company, Perm (2)OAO Research and Technological Institute of Optical Material Science All- Russian Scientific Center S.I. Vavilov State Optical Institute , Saint-Petersburg* The results of studies on co-doping of silica glass with fluorine and phosphorus by the modified chemical vapor deposition are presented. The parameters of the process of obtaining a low-melting glass with a refractive index close to the refractive index of vitreous silica are determined. The possibility of manufacturing the anisotropic single-mode optical fibers with elliptical cladding having a high coefficient of thermal expansion is shown. The effect of temperature on the length of polarization modes beats is investigated.
9:15-9:30	**A4-3. Mid-Infrared spectroscopic fiber sensors for molecular sensing** Butvina L.N.(1), Butvina A.L.(1), Zagorodnev V.N.(2), Lichkova N.V.(2) *(1)Fiber Optics Research Center RAS, (2)Istitute technology microelectronics IPTM RAS, Chernogolovka* Molecular specific Mid-IR spectroscopic sensing by silver halide fibers will be presented. Desing of sensor, applications in chemical process control in line will be discussed	**B4-3. Structure of acoustic waves in SBS strengthenong in optical fibers** Knish Olga Naniy Oleg Pavlova Eugene *(1) MSU, Faculty of Physics, Moscow* The report presents the results of numerical investigation of the shape of the acoustic waves generated by stimulated Brillouin scattering in optical fibers with different structures and its relationship with the coefficient of the SBS gain. It is shown that in general the structure of the generated acoustic waves may differ significantly from the structure of acoustic modes of an optical fiber. It was established that to improve the SBS threshold is necessary to use fibers that have a strong refraction, and to increase the amplitude of the acoustic wave is advisable to use fiber with focusing acoustic properties.

9:30-9:45	**A4-4. Fiber Fabry-Perot cavity-based probe with a protruding subwavelength aperture** Kulchin Yu.N.(1), Vitrik O.B.(1), Kuchmizhak A.A.(1) *(1)Institution of Russian Academy of Science Institute for Automation and Control Processes of Far Eastern Branch of RAS* Present paper is devoted to investigation of the possibility of creating a cavity-based probe for near-field optical microscopy systems based on a fiber Fabry-Perot interferometer with subwavelength protruding aperture. It was shown that the probe ensures a spatial resolution no worse than λ/37 for λ=1550 nm.	**B4-4. Influence of Ni impurity on the second-order nonlinearity induced by thermal poling in high purity tellurite glass 0.78TeO2 - 0.22WO3.** Gladyshev A. V. (1), Yatsenko Yu. P. (1), Grebenev V. V. (2), Snopatin G. E. (3), Plotnichenko V. G. (1), Dianov E. M. (1), Churbanov M. F. (3), Corbari C. (4), Kazansky P. G. (4). *(1) Fiber Optics Research Center RAS, (2) A.V.Shubnikov Institute of Crystallography RAS, (3) G.G. Devyatykh Institute of Chemistry of High-Purity Substances RAS, (4) Optoelectronics Research Centre, Southampton, UK* High purity 0.78TeO2 - 0.22WO3 glass was thermally poled and the influence of controllable addition of Ni on induced second-order nonlinearity (SON) was investigated. It was shown for the first time that SON as high as 1.2 pm/V could be obtained in such a glass without the need to inject external charge carriers. We found that Ni concentrations of more than 5·10-4 wt % significantly reduce SON. Impedance spectroscopy measurements of electrical conductivity revealed the reduction of conductivity in Ni containing glasses.
9:45-10:00	**A4-5. Low-coherence fiber-optic temperature sensor** Volkov P.V. (1) Goryunov A.V. (1) Lukyanov A.Yu. (1) Tertishnik A.D. (1) *(1) The Institute for Physics of Microstructures RAS, Nizhny Novgorod* A possibility to design a fiber-optical temperature sensor based on low-coherence tandem interferometry is reported. For the sensing element we used a 500 μm thick plane-parallel plate of fused silica. The plate thickness determined the measurement range of 40 to 90 C. The temperature resolution in the center of this range was 0.03 C RMS, decreasing to 0.1 C RMS at the edges. Reproducibility of the measurement data was better than 0.2 C.	**B4-5. The setup for studying the phenomenon of thermal diffusion in micro cell-based fiber-optic elements** Popov M.Y.(1), Okishev K.N.(1) *(1)Far Eastern State Transport University, Khabarovsk* The results of the pilot study the phenomenon of thermal diffusion of carbon nanoparticles in cyclohexane. The design of the experimental setup is based on fiber-optic elements. Proposed an automatic attenuator for fiber-optic line, which uses the phenomenon of thermal diffusion.
10:00-10:30	Break	
10:30-12:30	**Session A5. Fiber lasers and amplifiers – I**	**Session B5. Optical fibers and components – II**
10:30-10:45	**A5-1. Subnanosecond high-energy all-fiber laser system** Nyushkov B.N.(1), Turitsyn S.K.(2), Kobtsev S.M.(3), Ivanenko A.V.(3), Pivtsov V.S.(1), Denisov V.I.(1) *(1) Institute of Laser Physics SB RAS, Novosibirsk, (2) Aston University, Birmingham (UK), (3) Novosibirsk State University, Novosibirsk* An all-fiber laser system, which generates subnanosecond pulses with nearly 0.5-чJ energy at a repetition rate of ~ 82 kHz, has been developed on basis of an ultra-long self-mode-locked Er-fiber laser with an original gamma cavity design. Special design features, namely compensation for polarization instability in the ultra-long cavity arm, and application of an intracavity bandpass filter based on a fiber Bragg grating along with a tilted fiber grating, ensure high stability of laser characteristics and suppression of amplified spontaneous emission.	**B5-1. Photonics bandgap optical fibers (Invited)** Likhachev M.E. *Fiber Optics Research Center RAS* This paper reviews state-of-art of photonics bandgap fibers. The mechanism of light guidance, existing designs and their applications are discussed.

10:45-11:00	**A5-2. Coherent beam combination of fiber laser array** Yu.N.Pyrkov (1), V.B.Tsvetkov(1), A.S.Kurkov(1), A.I.Trikshev(1), I.A.Shcherbakov(1) *General Physics Institute RAS* In the article experimental results on coherent combination of the emission of 7 low-power fiber lasers are presented. The laser system consisted of the single frequency master oscillator with the subsequent splitting on 8 channels - one reference channel and 7 so-called power ytterbium doped power amplifier (YDFA) channels. Results of research of dependence of beam quality of total laser emission from the power unbalance value of power channels and distance between them are presented.	
11:00-11:15	**A5-3. Channel Waveguide Lasers Written in YAG Crystals by Femtosecond Pulses** A.G.Okhrimchuk (1) A.V.Shestakov (2) V.Mezentsev (3) I.Bennion (3) *(1) Fiber Optics Research Center RAS, Moscow (2) ELS Co., Moscow (3) Aston University, Birmingham, UK* A 110-чm core diameter multimode waveguides in the bulk of YAG:Nd3+ , YAG:Yb3+ and YAG:Nd3+/YAG:Cr4+ crystals are fabricated by beam of femtosecond pulses through inscribing several tens of parallel tracks composing a depressed cladding. Efficient CW and Q-switch laser operation is demonstrated in the fabricated waveguides under direct butt-coupling of a multimode fiber delivering pump light from high aperture laser diode with NA=0.15. Waveguide propagation loss was determined by Finlay-Clay analysis in oscillation experiments and was found to be as low as 0.12 dB/cm.	**B5-2. Variation of microstructures for the single-mode large-core fiber performance improvement** Demidov V.V., Dukel`skii K.V., Komarov A.V., Shevandin V.S. *S.I. Vavilov Federal Optical Institute, Saint-Petersburg* Results of novel types of single-mode large-core microstructured fibers development are presented. We report about shifted-core, circular-cladding and C3v-symmetry structures. The single-mode operation is provided by the proper conditions for the strong (about several dB/m) higher-order mode attenuation. In addition, the resistance of the fundamental mode to bend occurs simultaneously due to the increased air-filling fraction in the structured cladding.
11:15-11:30	**A5-4. SPM induced spectral broadening of high power Q-Switched fiber lasers** Kuznetsov A.G. (1) Babin S.A. (1) Podivilov E.V. (1) *(1) Institute of Automation and Electrometry SB RAS, Novosibirsk* A model of spectral broadening of nanosecond Gaussian pulses was build, calculations and comparison of input and output from fiber amplifier signals with experimental data were performed. It was shown that our new modified model for Gaussian pulses has a good agreement with experimental data and it makes possible to simulate processes of harmonics generation of fiber Q-Switched lasers	**B5-3. Single-mode polarizing Large-Mode-Area Bragg Fiber operating in a wide spectral range** S.S. Aleshkina(1), M.E. Likhachev(1), A.D. Pryamikov(1), D.A. Gaponov(1,3), A.N. Denisov(1), M.M. Bubnov(1), M.Yu. Salganskii (2), A. Yu.Laptev(2), A.N. Guryanov (2), S.Fevrier(3), Yu.A. Uspenskii(4), N.L. Popov(4) *(1) Fiber Optics Research Center of the Russian Academy of Sciences, Moscow, Russia (2) Institute of High Purity Substances of Russian Academy of Sciences, Nizhny Novgorod, Russia (3) Xlim, UMR 6172 CNRS - University of Limoges, France (4) P.N.Lebedev Physical Institute of RAS, Moscow, Russia* A new design of a polarizing all-glass Bragg fiber has been proposed. The microstructured core of the fiber provides suppression of high-order modes and of one of the polarization states of the fundamental mode. The fiber cladding with a Bragg mirror has been fabricated by a new, simple method based on a combination of the MCVD-process and the rod-in-tube technique. The mode-field area has been found to be about 870 um2 near λ=1064 nm The polarization extinction ratio as large as 12 dB has been observed over a broad wavelength range (33%) after propagation of a 1.7-m fiber piece bent to a radius of 70 cm.

11:30-11:45	**A5-5. Highly-chirped dissipative solitons generated in the fibre cavity without spectral filtering** Kharenko D.S. (1,3), Babin S.A. (1,3), Podivilov E.V. (1), Shtyrina O.V. (2), Yarutkina I.A. (2), Fedoruk M.P. (2,3) *(1) Institute of Automation and Electrometry SB RAS, Novosibirsk, (2) Institute of Computational Technologies SB RAS, Novosibirsk (3) Novosibirsk State University, Novosibirsk* The possibility of stable mode-locking regime in a laser with all normal dispersion cavity without the use of aditional spectral filtering was investigated. Stable generation of higly-chirped pulses with a pulse energy about 1nJ and a duration of 2 ps. Experimentally shows, that the chirp parameter an increase with increasing cavity length. Obtained results was compare with the analytic solution of complex Ginzburg-Landau equation in high-chirp approximation.	**B5-4. Mathematical modeling of a diphasic problem about an extract of hollow quartz fibres taking into account blowing by a stream of inert gas** Pervadchuk V.P. (1), Onyanov V.A. (2), Shumkova D.B. (2) *(1) Institute of photonic, optical and electronic instrument making of the Perm state technical university, Perm (2) Perm State Technical University, Perm* Modeling of a regional problem about an extract of the hollow quartz fibre which are passing in a cylindrical thermoelement and flowed round by a stream of inert gas is spent. The numerical algorithm of the decision is developed, research of properties of the constructed numerical algorithm is conducted, the decision of a quasione-dimensional stationary problem is received. The problem about an extract of a hollow quartz fibre taking into account a current in a cavity of a capillary of a stream of inert gas is numerically solved. From results of calculations follows that the developed numerical method can be applied to the decision of a diphasic problem on an extract of a quartz fibre and definition of optimum high-speed and temperature modes of an extract.
11:45-12:00	**A5-6. Dispersion-managed soliton amlification in mode-locke thulium-doped fiber laser** Krylov A.A. (1) Chernysheva M.A. (1) Tupitsin I.M. (2) Kryukov P.G. (1) Dianov E.M. (1) *(1) Fiber Optics Research Center RAS, Moscow (2) National nuclear scientific research university MEPHI , Moscow* We report all-fiber scheme of thulium-doped mode-locked fiber laser with intracavity group velocity dispersion compensation, generating dispersion-managed solitons, and an amplifier that compress this solitons to 230 fs-duration and amplifies to pulse energy of 14 nJ.	**B5-5. About a nature of optical losses in hollow core microstructured fibers and methods of controlling them** Biriukov A. S. (1) Pryamikov A. D. (2) Kosolapov A. F. (3) *Fiber Optics Research Center RAS, Moscow* In this report a view of the problem of origin of optical losses in hollow core microstructured fibers (HCMF) is carried out. The methods of controlling them is also considered. With this point of view, the last experimental and theoretical results in the field of light transmission in the near and mid IR spectral regions in HCMFs obtained at FORC RAS are analyzed.
12:00-12:15	**A5-7. Investigation of Active Double-clad Tapered Optical Fiber** V.E. Ustimchik (1,2), S.A. Nikitov (1,2), Yu.K. Chamorovskii (1) *(1)Institute of Radio-engineering and Electronics of the Russian Academy of Sciences, Mokhovaya st. 11, bld.7, 125009 Moscow, Russia (2)Moscow Institute of Physics and Technology (State University), Institutskiy per. 9, 141700, Dolgoprudniy, Moscow region, Russia* The model of lasing in active double-clad tapered optical fibers, based on the rate equations in adiabatic approximation is developed. We performed numerical modeling of a lasing process in ytterbium doped tapered fibers with various geometric profiles and mirrors on both ends. Advantages of tapered fibers with respect to cylindrical fibers are presented. These are low power density, high output power, higher slope efficiency, smaller length that is necessary for achievement of similar output power.	**B5-6. Analysis and optimization of model structures of highly birefringent microstructured fibers** Denisov A.N., Levchenko A.E., Semjonov S.L., Dianov E.M. *Fiber Optics Research Center RAS, Moscow.* We present the results of the numerical analysis of different model structures, which approximate the highly birefringent microstructured fibers (HiBi MSFs) prepared by us. The strong dependence of the calculated values of birefringence on the curvature of holes in the region, which is directly adjacent to the core, and their independence on the presence/absence of the second layer of holes is shown. For the calculations of the birefringence of the prepared by us HiBi MSFs the model structure is proposed, which possesses the best accuracy of the description of HiBi MSF core with relative geometric simplicity.

12:15-12:30	**A5-8. Fiber lasers in processing of films and surface coatings** Surmenko E.L. (1), Sokolova T.N. (1), Popov I.A. (1), Kurkov A.S. (2) *(1) Saratov State Technical University, Saratov (2) Prokhorov General Physics Institute RAS, Moscow* Laser technology is described for cleaning of surface and processing of films for trimming of resistors. The low-power fiber laser having microsecond pulse, pulse repetition rate up to 30 kHz and mean power 4.5 W was applied. The suggested technology allows reducing the time of manufacture and the amount of the operations needed for the same result with other equipment.	**B5-7. Waveguide properties of the solid and hollow core photonic crystal fibers** Mazhirina Yu.A.(1), Melnikov L.A.(2) *(1) Saratov State University, (2) Saratov State Technical University* The dispersion diagram of the waves propagated in the cladding of photonic-crystal fibers can include the bandgaps due to the periodicity of the cladding. If the dispersion curve of the core mode in the region below the cutoff intersects the bandgap, this mode may become guided again. We calculated the dispersion characteristics of the photonic-crystal fibers with solid and hollow core for the different structures with one- and seven-element defects. The calculations confirmed the existence of the waveguiding regions within the cladding photonic bandgaps.
12:30-13:00	Break	
13:00-14:15	**Session A6. Fiber-optic sensors – IV**	**Session B6. Optical fibers and components – III**
13:00-13:15 13:15-13:30	**A6-1. Distributed sensors based on coherent pulse reflectometry and their applications (Invited)** Gorshkov B.G. *Omega company* Phase sensitive reflectometry based on high coherent pulse light sources becomes an industrial technology due to achievements in fiber lasers. The coherent reflectometer allow to monitor vibrations at thousands of independent channels in real time. This property promise numerous applications on the field of extended objects monitoring as well as guard systems. In the report the examples of full scale application of coherent pulse reflectometry at oil industry are discussed.	**B6-1. New technologies and materials for fabrication of active optical fibers (Invited)** Guryanov A.N. *Institute of Chemistry of High Purity Substances RAS, Nizhnii Novgorod*
13:30-13:45	**A6-2. Brillouin OTDR with an aspect by measuring the frequency shift** Sitnov N.U. (1) Zaslavski K.E. (2) Gorlov N.I. (3) *Siberian State University of Telecommunications and Informatics, Novosibirsk city* Study the limits of the functionality of the Brillouin OTDR with an aspect by measuring the frequency shift. Provides a block diagram of an analyzer based on the aspect method, Brillouin OTDR.	**B6-2. Doping of optical fiber preforms by oxide and metal nanoparticles** Campelj Stane (1) Lenardic Borut (1) Kveder Miha (1) *(1) Optacore d.o.o., Ljubljana, Slovenia* Presented paper reports on doping of silica glass layers by nanoparticles of oxides and noble metals, during fabrication of optical fiber preforms by MCVD process equipped with specialized doping devices. Preforms doped by different nanoparticle types were deposited in varying process conditions and analyzed. "Flash vaporization" and "Aerosol" doping method is demonstrated as suitable method for deposition of nanoparticles in silica layers, permitting in-situ fabrication of complete preforms.

13:45-14:00	**A6-3. Statistics of backscattering intensity in single mode optical fiber for semiconductor laser diode used as light source** Alekseev A.E.(1), Tezadov Y.A., (1), Potapov V.T. (2) *(1) NTO IRE-Polus CO, Fryazino, Moscow Region, (2) Institute of Radioengineering and Electronics Fryazino Department, Fryazino, Moscow Region,* The results of the study of backscattering intensity statistics in single mode optical fiber for semiconductor laser diode used as light source are presented. The probability density function depends on the ratio of pulse duration and source coherence time and changes with the increase of this ratio from the function with exponential decay to Gaussian function. The exponential statistics enables better sensitivity of the coherent optical time domain reflectometer with direct detection method.	**B6-3. Fabrication of aluminophosphosilicate glass fibers heavily doped with Er2O3 by MCVD method** Gur yanov A.N. (1), Lipatov D.S. (1), Bubnov M.M. (2), Likhachev M.E. (2) *(1) Institute of Chemistry of High Purity Substances RAS, Nizhnii Novgorod, (2) Fiber Optics Research Center RAS, Moscow* Two gas-phase techniques for Er2O3 doping of aluminophosphosilicate glasses have been developed. In the first technique all oxides, forming fiber core, were deposited simultaneously. With this procedure the erbium content in aluminophosphosilicate glasses did not exceed 1 wt %. In the second technique a porous Al2O3-P2O5-SiO2 layer was infiltrated with Er2O3 from the gas phase. This procedure ensures considerably higher rare-earth doping levels in aluminophosphosilicate glasses of up to several weight percent.
14:00-14:15	**A6-4. Some question about application of optical fibers as temperature sensors** Zamyatin I.A.(1), Larin Yu.T.(2), Smirnov Yu.V.(3) *(1) VNIIKP-OPTIC Ltd., Moscow, (2) VNIIKP OJSC, Moscow, (3) NPP Starlink Ltd., Moscow* This report discusses the application of optical fibers as temperature sensors. The authors give information about experimental use of G-652 optical fibers for temperature measurement in the range of minus 193 to 100 for the purpose of cable product and cable system characteristics control. Cable constructions were tested under real service conditions are offered.	**B6-4. Study of physical and chemical processes of fluorine doping of silica by MCVD method** Eronyan M. A. *OAO Research and Technological Institute of Optical Material Science All-Russian Scientific Center S.I. Vavilov State Optical Institute , Saint-Petersburg* Processes of fluorine doping of silicon dioxide nano-particles and their sintering are investigated by computational and experimental methods. It is shown that with increasing content of fluorine increases the rate of sintering of porous layers, obtained by vapor deposition. Known dependence of the refractive index of silica glass on the pressure SiF4 in the degree of 0.25 determined by the competition of these two processes.
14:15-15:15	Lunch	
15:15-16:30	**Session A7. Fiber-optic communications – IV**	**Session B7. Optical fibers and components – IV**
15:15-15:30 15:30-15:45	**A7-1. Round table "Coherent optical communications"** Moderator – Turitzyn S.K.	**B7-1. The SPCVD technology (Invited)** Golant K. M. *Kotel nikov Institute of Radio-Engineering and Electronics of RAS, Moscow* The operation principle and performance capabilities of the modern technology for deposition of high-purity and specialty-doped silicon dioxide by means of scanning microwave-induced surface-wave plasma are illustrated by their practical application to solutions to various tasks topical for photonics and fiber optics.
15:45-16:00	**A7-2. Modulator s bias instability impact on all-optical microwave filter s frequency responce** Sadeev T.S. (1) Morozov O.G. (1) *A.N.Tupolev Kazan state technical university (1), Kazan* Questions of modulator s bias instability impact on the all-optical microwave filter s frequency responce. Shown that this instability should be taken into consideration and compensated if necessary when filter is based on electrooptical modulator.	**B7-2. Cristobalite - new material for fibre optics** Chernoskutov A.G. *(1)OAO Miass machine building plant , Miass*

16:00-16:15	**A7-3. Intensity modulator based on Mach-Zehnder Interferometer** Ponomarev R.S. *Perm Scientific Industrial Instrument Making Company* This article is devoted to telecommunication modulator based on Mach-Zehnder interferometer. Results of Perm Scientific Industrial Instrument Making Company produced sample are presented. On-off extinction results and modulation efficiency results are exhibit. Also operating point stable results are presented. Experimental sample was made with proton exchange and annealing technology.	**B7-3. Method of fabrication of the silica glass doped optical materials for active optical fibers by sintering of powders oxides** Velmiskin V. V, Egorova O. N, Semjonov S.L., Dianov E.M. *Fiber Optics Research Center RAS* The method of fabrication of preforms of active silica optical fiber by sintering of powders oxides is investigated. A number of the preforms and fiber doped ions Yb3+, Al3+, Bi2+,3+ is obtained and them structural, optical and luminescent properties is investigated. The minimum level of optical background losses in the fibers containing 2 wt % Al2O3 was 60 dB/km at a wavelength 1 um. The technique of reduction to submicronic sizes of optical and concentration fluctuations in a obtained optical material is developed and realized.
16:15-16:30	**A7-4. The stability of symbol frequency of a DBPSK signal formed using Il in-Morozov approach** Lerner I.M. (1), Ilyin G.I. (1) *(1) Kazan State Technical University named by A.N. Tupolev* The stability of symbol frequency depending on probabilities of occurrence of ones and zeroes in a binary semi-random sequence is studied. Normalized spectrums depending of probabilities of occurrence of ones and zeroes in a binary semi-random sequence are shown	**B7-4. DEVELOPMENT OF AMPLITUDE-PHASE TUNABLE DIFFRACTIVE OPTICAL ELEMENTS** Matyunin S.A. (1), Paranin V.D. (2) *Samara State Aerospace University, Samara* The construction and working principles of tunable amplitude diffractive optical elements (TDOE) and tunable ampli-tude-phase diffractive optical elements are proposed. Theoretical models of developed optical elements are created. Com-puter modeling of optical and functional properties of TDOE is implemented.
16:30-18:00	**Poster Session**	
	C-1. Algorithmic compensation for thermally induced shift in FOG Galyagin K.S.(1), Ivonin A.S. (1,2), Oshivalov M.A. (1), Vahrameyev E.I. (1) *(1) Perm State Technical University (2) Perm Scientific - Industrial Instrument Making Company* The technique to obtain the calculated prediction of the fiber-optic gyroscope thermal drift according to the thermometry data of the sensitivity unit to correct the readings in terms of thermal disturbances is studied. The results of practical testing algorithm for correction of thermocyclic tests of the device are presented. The methodical aspects of the calibration characteristics of a gyroscope formation to improve the accuracy and reliability of thermal displacement compensation are viewed.	
	C-2. Modern fiber-optic sensors temperature, pressure for biomedicine Korolyov V.A., Potapov V.T. *Fryazino branch of the Institution of Russian academy of sciences Kotel nikov Institute of Radio Engineering and Electronics of RAS,Fryazino* Provides an overview of today s commercial fiber-optic sensors temperature and pressure for possible use in surgery and oncology. We show the existence of real high-tech products for biomedical applications of this class. Are the basic technical characteristics of sensors.	
	C-3. Semiconductor fiber-optic laser giro Prokofyeva L.P.(1), Sakharov V.K.(1), Shcherbakov V.V.(1) *JSV Center VOSPI , Moscow* A new approach to realizing of a semiconductor fiber-optic laser gyroscope based on a novel model of frequency-locking phenomenon in a ring laser is proposed. The model is directly related with backscattering and the approach uses a long fiber-optic resonator (~300 m), optical injection of external emission in the ring laser and phase difference of two counter-propagating beams.	
	C-4. Regimes of bound solitons in fiber lasers with saturable absorbers Komarov A.K.(1), Komarov K.P.(1), Meshcheriakov D.V.(2) *(1) Institute of Automation and Electrometry SB RAS, Novosibirsk, (2) Novosibirsk State Technical University, Novosibirsk* Using numerical simulation we have analyzed an interaction of ultrashort pulses and realizing various types of soliton bound states in fiber lasers with saturable absorbers. Characteristic modifications of regimes of bound solitons under a variation of laser parameters have been found. The developed theory of passive laser mode-locking and the obtained results allow to describe, interpret and optimize regimes of generation of fiber lasers with the nonlinear losses due to various	

	nanomaterials (media with quantum dots, nanotubes, graphene, and so on).
	C-5. Hysteresis of energy characteristrics of passive mode-locked fiber lasers. Komarov A.K. (1), Dmitriev A.K. (2), Meshcheriakov D.V. (2) *(1) Institute of Automation and Electrometry, Novosibirsk, (2) Novosibirsk State Technical University, Novosibirsk* We have found the multihysteresis dependence of an intracavity radiation energy on pumping for passive mode-locked fiber lasers. The relation between the energy multihysteresis and the analogical hysteresis for a peak intensity and for a number of pulses in an established operation has been determined. It is shown, that under a variation of a pump, the hard (threshold) and soft regimes of excitation and annihilation of ultrashort pulses in a laser cavity can be realized. In the case of the soft regime the pulse parameters change continuously.
	C-6. The observation of excitation threshold of the Slow solitary elastic waves (SSEW) with discrete velocities in glass sample of millimeter cross-section Kudriavtsev E.M. (1), Zotov S.D. (1), Lebedev A.A. (1) *P.N. Lebedev Physical Insitute of the RAS, Moscow* The investigations of Slow solitary elastic waves (SSEW) with discrete velocities in samples of millimeter cross-section are continued. Modifying of the schlieren-method calibration techniques revealed a mistake in the previous experiments (report 2009). To simplify the experiments on the threshold, the SSEW excitation was produced by electrical heaters, which have different speed and value of heating. It is important to determine the SSEW mechanism that the SSEW components formed both at heating and at cooling of electrical heater with the sample contact point (i.e. the cause of the waves is the local deformation of the sample).
	C-7. Structural realization and classification of tunable diffractive optical elements Paranin V.D. *Samara State Aerospace University, Samara* The analysis of principles of working and designs of tunable diffractive optical elements (TDOE) is presented. The system of splitting УДОЭ on base elements of a design and also system of designations of base elements is offered. The analysis of increasing sensitivity methods for TDOE is carried out.
	C-8. Resistance against freezing water effects in protective polymeric duct in microduct optical cable Alekhin I.N. (1) Burdin V.A. (1) Gavryushin S.A. (1) Nikulina T.G. (1) Onyshchenko S.G. (2) *(1) SEIHPE Povolzhskiy State University of Telecommunications and Informatics, Samara (2) JSC SOCC* Results of experimental researches of optical microcable in microduct at water freezing in protective polymeric duct are presented.
	C-9. Optical fiber light-guide cladding defects localization Burdin V.A. (1) Dashkov M.V. (1) Dmitriev E.V. (1) Kachkov D.A. (2) *(1) SEIHPE Povolzhskiy State University of Telecommunications and Informatics , Samara (2) JSC Svyazstroy-4 , Nizhniy Novgorod* Results of physical simulation of optical fiber light-guide cladding defects localization based on comparison polarization backscattering characteristic are presented.
	C-10. Transmission spectra of fiber-optic interferometer based on a section of small-core fiber under bending Ivanov O.V. (1,2) *(1) Ulyanovsk Branch of Kotel nikov Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Goncharova 48, 432011 Ulyanovsk (2) Ulyanovsk State University, ul. Tolstogo, 42, 432970 Ulyanovsk* A fibre-optic interferometer based on interaction between core and cladding modes that are coupled at splices of fibres having unmatched mode profiles is investigated. The interferometer is formed by splicing a section of small-core fibre between two standard fibers. The transmission spectra of the interferometer are measured for different curvatures of the inserted fiber section. The transmission spectra exhibit resonance shifts to long wavelength with increasing curvature of the fiber.
	C-11. Simulation modeling of quartz optical fibres drawing process Pervadchuk V.P. (1) Krukov I.I.(2) Davydov A.R. (1) *(1)The Perm State technical university, Perm (2) Perm Research and Production Instrument Company (PNPPK), Perm* An approach to simulation modeling of the drawing process of preparation of quartz optical fibers is offered. Modeled by a deterministic relationship of geometric and technological parameters of preparation and fiber based on the law of conservation of mass. Stochastic component of the change in the diameter quartz simulated normal distribution. Managing the process is to keep the diameter of the quartz in a given range by appropriately adjusting the drawing. Quality of the process is controlled by the coefficient of repeatability. Propose a model of evaluation of optical fiber characteristics.

	C-12. Fiber-optic hydrophones with low optical losses Belovolov M.I.(1), Zaynullin E.F.(1), Turtaev S.N.(1), Granev I.V.(2) *(1) Fiber Optics Research Center RAS, (2) JSC Perm Research and Production Instrument Company (PNPPK)* The excess optical losses of standard single mode fibers on the coils has been investigated experimentally and best performance fiber was found for hydrophone applications.
	C-13. Broadband spectral wavelength tuning of fiber laser using reflection interferometer Terentyev V.S. (1) Simonov V.A. (1) *(1) Institute of Automation and Electrometry SB RAS, Novosibirsk* The results of experimental studies of the wavelength tuning of a fiber erbium laser using a two-mirror reflection multiple-beam interferometer (RI) is reported. The RI can act as a spectral selector in reflected light because of the asymmetry of the front mirror reflectivity, since it forms in reflection the same interference pattern as a Fabry-Perot interferometer has in transmission. It was obtained smooth tuning of the fiber laser wavelength in the range of 1520-1566 nm.
	C-14. NUMERICAL INVESTIGATION OF FEMTOSECOND RADIATION PARAMETERS INFLUENCE ON MODIFICATION PARAMETERS OF FUSED SILICA IN FEMTOSECOND MICROFABRICATION Dostovalov A. V. (1), Babin S. A. (1), Mezentzev V. K. (2), *(1) Institute of Automation and Electrometry Siberian Branch of Russian Academy (2) Aston University, Birmingham, United Kingdom* The results of numerical study of energy absorption in femtosecond inscription in fused silica with fundamental (λ = 1030 nm) and second harmonics (λ = 515 nm) of femtosecond laser are presented. It is shown absorbed energy at λ = 515 nm is higher than absorbed energy at λ = 1030 nm, therefore the second harmonic is more preferable for femtosecond microfabrication, because modification threshold is lower in this case. The results of influences of following pulse parameters: chirp, temporally asymmetry are presented.
	C-15. Investigation of formation mechanisms of micro-inhomogeneities at core-cladding interface in heavily doped silica optical fibers Alekseev V.(1), Likhachev M.(1), Bubnov M.(1) *(1) Fiber Optics Research Center RAS,Moscow* Anomalous scattering on refractive-index micro-inhomogeneities is the main source of optical loss in heavily doped and microstructured optical fibers. It leads to some added loss in weakly doped fibers, too. Two mechanisms to explain the formation of the micro-inhomogeneities have been proposed: capillary waves and hydro-dynamic instability of the core-cladding interface during the drawing process. In this paper, investigations are reported which allow one to conclude that it is the hydro-dynamic instability of the core-cladding interface that gives rise to the micro-inhomogeneities. Techniques to reduce optical loss in such fibers are proposed.
	C-16. Amplifier of chirped pulses on the bases of the Large-Mode-Area Fibers S.S. Aleshkina (1), M.E. Likhachev (1), M.M. Bubnov (1), M.Yu. Salganskii (2), Yashkov M.V. (2), Lipatov D.S. (2), A.N. Guryanov (2) *(1) Fiber Optics Research Center of the Russian Academy of Sciences, Moscow, Russia (2) Institute of High Purity Substances of Russian Academy of Sciences, Nizhny Novgorod, Russia* Amplification of ultra-short chirped pulses (l=1.03 um) in the MOPA system (master oscillator - power amplifier) with output cascade based on different types of Large-mode-area Yb-doped fibers is investigated.
	C-17. Mathematical modeling and stability of processes of an extract of fotonno-crystal optical fibres Pervadchuk V.P. (1), Shumkova D.B. (1) *(1) Institute of photonics, optical and electronic instrument making of the Perm state technical university, Perm* One of important indicators of quality of a fibre is the constancy of its properties and the geometrical sizes on length. Questions of stability and definition of area of parameters are investigated, at which probably continuous formation of an optical fibre. Process of an extract of hollow quartz pipes is described by system of four differential equations in private derivatives. Research of stability of process of an extract of capillaries is shown to a problem on own values of system of the ordinary differential equations with corresponding boundary conditions.
	C-18. A method for measuring the refractive index of liquids based on the resonant coupling of modes in curved Fabry-Perot Kulchin Yu.N. (1), Vitrik O.B. (1), Gurbatov S.O. (1) *(1) Institution of Russian Academy of Sciences Institute for Automation and Control Processes Far Eastern Branch of RAS* This work is devoted to developing a method of measuring the refractive index based on the resonant coupling of modes in curved Fabry-Perot

	C-19. Modulator s bias control system in the structure of an all-optical microwave filter Sadeev T.S. Morozov O.G. *(1) Tupolev Kazan state techn. university* The results of studies on the impact of bias point instability on the frequency response of the all-optical microwave filter fully demonstrated the need to control the position of the bias point. In this study, the bias point monitoring system, implemented in the filtering channel and in filter coefficients formation channel are suggested.
	C-20. Nonlinear Dynamics of long Raman fiber laser Romanova E.I. (1) Melnikov L.A. (2) *(1)Saratov State Technical University (2)Saratov State Technical University* Raman fiber lasers having cavity length about tens km are useful for communications and for other applications. Its features includes low beat frequency of longitudinal modes, small cavity bandwidth, huge number of longitudinal modes, feedback due to light scattering. In present paper the dynamical model of these lasers is presented. Corresponding equations for pumping and generation pulse amplitudes are derived together with corresponding boundary conditions, demonstrating different regimes of operation.
	C-21. Application of highly non-linear fibers in optical communication lines with dispersion compensation Kirill A. Volkov Michael V. Dashkov *Povolzhskiy state university of telecommunication and informatics, Samara* In this paper features application of HNLF in dispersion managed fiber optical communication lines are considered. Results of analitical numerical simulation of quasi-soliton in dispersion managed section including HNLF are presented.
	C-22. EFFECT OF PRE-GAMMA IRRADIATION ON LOW-TEMPERATURE KINETICS OF COLOR CENTERS IN POLARIZANGTION MAINTAINING FIBERS Burmistrov A.C.[1], Dolgov I.I.*[2], Dolgov P.I.[2] *[1]FSUE "Center of use of ground space infrastructure" (FSA FSUE "TsENKI")* *[2] LLC "Ivan Dolgov Laboratory" (LLC "IDL")* It has been presented the results of researching the effects of gamma-radiation up to dose of 270 kR at a dose rate 6.2 R/s and temperature of +50 ^{0}C on kinetics of radiation-induced optical attenuation (RIA) measured at a temperature of minus 60^{0}C in IRE RAS manufactured test samples of polarization maintaining fibers of the PANDA-type with 4 of various types of dopants. It is proposed to introduce a comparative benchmark RIA (CBRIA), which will always be applied in all labs. Quartz optical fibers of the same type, for example, doped with germanium are proposed as CBRIA. This will allow to compare objectively methods and results of measurements made by different authors.
	C-23. The role of longitudinal surface electric field in the sensitivity of cladding modes of optical fiber to the external medium Ermolaev I.V. (1), Ivanov O.V. (2,3) *(1) Ulyanovsk State Technical University, Ulyanovsk, (2) Ulyanovsk Branch of Institute of Radio Engineering and Electronics. V.A. Kotelnikov RAS, Ulyanovsk, (3) Ulyanovsk State University, Ulyanovsk* The sensitivity of long-period fiber gratings and other components based on the use of cladding modes to the external medium is due to propagation of a surface field near the cladding. It is demonstrated that the longitudinal surface electric field has the same order of magnitude as the transverse field. Therefore, the role of the longitudinal component in the sensitivity of cladding modes to parameters of the external medium is investigated.
	C-24. New photostability IR-lightguides on the base of silver and thallium (I) halides solid solutions crystals Korsakov A.S. (1) Zhukova L.V. (1) Cherepanov A.N. (1) Zharikov E.V. (2) Novikov A.V. (1) Korsakov E.A. (1) *(1)Ural Federal University named after the first President of Russia B.N. Eltsin, Yekaterinburg (2) Mendeleyev University of Chemical Technology of Russia, Moscow* The new photostability crystals on the base of silver and thallium (I) halides solid solutions are elaborated. On their base there were also made IR-lightguides by extrusion method. For the structure with TlI there is more than three times photostability increasing shown in contrast with AgCl-AgBr system.

	C-25. High-purity TeO2-based glasses and optical fibers Dorofeev V.V. (1), Moiseev A.N. (1), Churbanov M.F. (1), Snopatin G.E. (1), Kosolapov A.F. (2), Plotnichenko G.V. (2), Dianov E.M. (2) *(1) - Institute of Chemistry of High-Purity Substances of RAS, Nizhny Novgorod (2) - Fiber Optics Research Center RAS, Moscow* Tellurite glasses were made of high-purity oxides with 3d-transition metals content of 10-5-10-7 % wt.. Hydroxyl groups concentration corresponds to absorption of 0,001-0,002 cm-1 at maximum of the band (~3 microns). Absorption loss in glasses were of 40-100 dB/km (1.56 microns). Compositions with increased stability against crystallization were defined. Multimode fibers with optical loss of hundreds dB/km, singlemode step-index and microstructured fibers were produced by double crucible and rod-in-tube methods.
	C-26. REQUIREMENTS TO DESIGN AND ENGINEERING EQUIPMENT FOR FIBRE-OPTICAL MANUFACTURES **S.V. Sazhnev, Ph.D.** OOO "Eltochpribor" Fibre-optical manufacture is a complex system of technological, engineering and ancillary equipment, under conditions of increased industrial safety. In the report the basic approaches to designing, requirements to the industrial infrastructure, providing high quality of fibre-optical products are observed. The special attention is given to the system of safety at proceeding with explosive and aggressive reagents.

	14 October	
8:30-10:00	**Session A8. Fiber-optic sensors – V**	**Session B8. Optical fibers and components – V**
8:30-8:45 8:45-9:00	**A8-1. Fiber optic sensors and measuring systems based on single fiber multimode interferometers (Invited)** Vitrik O.B. (1) *(1) Institution of Russian Academy of Sciences Institute for Automation and Control Processes Far Eastern Branch of RAS* The aim of this paper is to review the possible application of single-fiber multimode interferometer to create transducers and multichannel measuring systems for monitoring the technical state of different objects.	**B8-1. New Corning optical fiber products and their applications (Invited)** Akopov S.G. *OOO Corning SNG , Moscow* Progress in new coherent equipment development for long distance transmission and worldwide progress in installation of FTTx networks created new approaches to new optical fiber designs. The article contains information about new product line of Corning fiber products, about their physical background and recommendations for their applications.
9:00-9:15	**A8-2. Principles of constructions of intelligent fiber optic sensors** Buymistriuck G.Y. *The Instruments plant Vibrator , Saint-Petersburg* Information redundancy of fiber optic sensors, as well as possibility to their programmable tuning in combination with a minimum structural redundancy allow to develop the so-called intelligent sensors with a function of metrological self-checking (FMSC). The FMSC of fiber-optic sensors is provided with their multimodality, i.e. with their similar dependence of an output signal on several variable parameters, for example, with their dependence on a variable pressure at a constant optical spectrum of an input signal and, accordingly, on a readjusted optical spectrum of the signal at a constant pressure. Details of the intelligent fiber optic pressure sensors based on a Fabry-Perot interferometer, as well as acoustic emission sensors based on the intrinsic fiber Doppler effect and strain sensor based on Bragg grating are considered. Results of modeling are presented, and comparison of the experimentally obtained metrological and technical-economical characteristics such as noise.	**B8-2. Development of a modified correlation method of defects localization in optical fibers** Konstantinov Y.A. (1), Mazunina T.V. (1) *(1) Perm Scientific Industrial Instrument-Making Company* A new method for localization of defects in an optical fiber by the OTDR data processing, based on a special algorithm is shown. The algorithm is based on the calculation of the cross-correlation coefficient on intervals of reflectograms of varying lengths. Testing of method was carried out on reflectogram models generated by the OTDR software emulator.

9:15-9:30	**A8-3. Frequency response of coil based fiber optic acoustic sensors** Belovolov M.I.(1) Turtaev S.N.(1) Zaynullin E.F.(1) *(1)Fiber Optics Research Center RAS* Acoustic frequency response of SMF-28 fiber based multicoil elements has been investigated depending on the typical coating materials in similar conditions.	**B8-3. Photodarkening of active ytterbium-doped silica fibers under UV and IR laser-irradiation** Rybaltovsky A.A. (1), Aleshkina S.S. (1), Umnikov A.A. (2), Yashkov M.V. (2), Likhachev M.E. (1), Bubnov M.M. (1), Guryanov A.N. (2), Dianov E.M (1) *(1) Fiber Optics Research Center RAS, Moscow (2) Institute of Chemistry of High-Purity Substances of RAS* The results of comparative investigations of UV and IR laser-induced absorption and luminescence spectra in the Ytterbium-doped fibers and preforms are reported. It is established that UV-laser excitation of absorption bands peaking at 5 and 6.5 eV leads to absorption induction in the visible spectral range - the same under the form, as well as induced by IR pumping-laser. The phenomenological model of photodarkening effect is offered: it is proposed that process of colour-centers formation and related-absorption induction is caused by cooperative effect based on the synchronous Ytterbium ion-pairs excitation and transferring that cumulative excitation energy to the 5 and 6.5 eV absorption energy levels.
9:30-9:45	**A8-4. Thermo-acoustic effect in fiber interferometers and sensors** Belovolov M.I.(1), Belovolov A.M. (1), Dianov E.M. (1), Turtaev S.N.(1) *(1) Fiber Optics Research Center RAS* For the first time, acoustic - frequency splitting has been detected for the case when temperature is acting on the fiber arm of an interferometric acoustic sensors. It is shown that this thermo-acoustic effect allows the creation ofhighly sensitive temperature sensors (sensitivity of ~ 10-3 oC).	**B8-4. Annealing of absorption induced by UV-radiation in H2-loaded germanosilicate fibers** Vasiliev S.A., Medvedkov O.I., Gnusin P.I., Dianov E.M. *Fiber Optics Research Center RAS, Moscow* Annealing of absorption in the 1.4-um wavelength range induced by UV-radiation in H2-loaded germanosilicate fibers was studied by temperature resolved spectroscopy. This method allowed us to determine the characteristic temperature ranges of annealing of photoinduced groups - H2O, Ge-OH, and Si-OH - and, as a result, to analyze the contribution of these groups to the induced refractive index.
9:45-10:00	**A8-5. Application of Distributed Acoustic Fiber Sensors** Shatalin S.V. Parker T.R. Farhadiroushan M. *Silixa LTD, UK* The distributed fiber-optic acoustic sensor can measure acoustic field continuously in space and time with spatial resolution better than 1 m. This tool promises a lot of useful applications in oil industry including downhole Doppler flow meter. Distributed acoustic also can be a base of a new generation of seismology and security systems.	**B8-5. Photosensitivity of H2-loaded fibers heavily doped with germanium** Medvedkov O.I., Vasiliev S.A., Gnusin P.I., Dianov E.M. *Fiber Optics Research Center RAS, Moscow* Writing and annealing processes of fiber Bragg gratings in H2-loaded fibers heavily doped with germanium have been investigated. It was found that owing to the competition of two photosensitivity mechanisms (type I(H2) and type IIa), the reflection coefficient of the grating experiences twofold oscillation during the grating fabrication. Annealing of the induced refractive index is also nonmonotonic.
10:00-10:30	Break	

10:30-12:30	**Session A9. Fiber lasers and amplifiers – II**	**Session B9. Optical fibers and components – VI**
10:30-10:45 10:45-11:00	**A9-1. Fiber lasers with random distributed feedback (Invited)** Babin S.A. *Institute of automation and electrometry SB RAS, Novosibirsk, Russia* *Novosibirsk state university, Novosibirsk, Russia* A review of the recent papers on the fiber lasers with random distributed feedback (RDFB) is performed. It is shown that the feedback reasoned by the Rayleigh scattering in a long fiber with distributed Raman amplification even without regular reflectors results in a stationary narrowband (~1nm) lasing of high (~30%) efficiency. A tuning of such laser in broad range of 1535-1570 nm with high flatness (~0.1dB) has been demonstrated. A combination of the RDFB and fiber Bragg gratings array results in competition-free multiwavelength generation of >20 lines with 1-nm spacing. Unique features of the RDFB laser are treated.	**B9-1. Corning specialty optical fibers (Invited)** Valery Kozlov *Corning Inc., Corning, NY USA* Overview of specialty optical fibers manufactured by Corning specialty fiber group
11:00-11:15	**A9-2. Mid-IR supercontinum generation in standard telecommunication fibers** Kurkov A.S. (1) Kamynin V.A. (1) *(1) General Physics Institute RAS, Moscow* We have studied the supercontinum generation in the spectral range of 2-2.4 micron. Cladding pumped Q-switched Er-doped fiber laser was used as a pump source. Single-mode fibers with zero dispersion wavelengths at 1.3 and 1.55 micron and multimode fiber were used for the spectral conversion. It was shown that the supercontinum is observed in all fibers. Conversion efficiency achieves 40%.	**B9-2. Coatings for specialty optical fibers (Invited)** Stolov A.A. *OFS, Specialty Photonics Division, Avon, CT, USA* In our presentation we review the types of polymeric materials utilized as coating on specialty optical fibers. Advantages and shortcomings of various materials are discussed in conjunction with specific applications of the fibers. We analyze our own and documented data on behavior of optical fibers with different coatings at high and low temperatures and in harsh environments.
11:15-11:30	**A9-3. Random distributed feedback fiber Raman laser, operating in a 1.2 mkm frequency range** Vatnik I. D. (1,2), Churkin D. V. (1,2), Babin S.A. (1,2) *(1) Institute of Automation and Electrometry, Novosibirsk (2) Novosibirsk State University* Random distributed feedback fiber Raman laser, operating at 1175 nm, has been demonstrated.Feedback is provided by Rayleigh backscattering by inhomogeneities of refractive index. We have obtained generation with total efficiency up to 60% and narrow spectrum with FWHM of 1 nm. Cascade generation of the second Stokes component, provided by Rayleigh feedback, has been achieved.	

11:30-11:45	**A9-4. Extreme events statistics in the output radiation of the Raman fiber laser** O.A. Gorbunov (1), S.V. Smirnov (2), D.V. Churkin (1),(2) *(1) Institute of Automation and Electrometry, SB RAS, Novosibirsk (2) Novosibirsk State University* In the present paper we study the extreme events in the output radiation of the partially coherent quasi-CW high-Q cavity Raman fiber laser. It is found that rear rogue events are generated at the far spectral wings of the spectrum. Having big spectral detunings, extereme events are more pronounced in the output radiation of the high-Q cavity. The mechanism of the extreme events generation is turbulent-like four-wave mixing of numerous longitudinal modes inside the cavity.	**B9-3. High Temperature Metal coated optical fibers** Voloshin V.V. (1) Vorob yov I.L. (1) Ivanov G.A. (1) Isaev V.A. (1) Kolosovsky A.O. (1) Borat L. (2) Popov S.M. (1) Chamorovsky Y.K. (1) *(1) Institute of Radio-technique and Electronics Russian Academy Of Science, Fryazino Branch, Russia (2) Optacore, Ljubljana, Slovenia* Temperature band of ordinary telecommunication optical fibers (OF) is -60…850C. The developing fiber optic sensors which can work at higher temperatures, required to develop metal coated optical fibers. Previously we investigated the influence different metal coating types (aluminum or copper) on optical loss of metal coated OF up to 4000C. In present work we investigated additional optical loss change of copper coated OF at temperatures t=20…800C. Such fibers were drawn from low hydroxyl (<0.3 ppm) contamination preforms.
11:45-12:00	**A9-5. Fiber optical parametric oscillator based on a polarization maintaining fiber** Zlobina E.A.(1), Kablukov S.I.(1,2), Babin S.A(1,2) *(1) Institute of Automation and Electrometry, Siberian Branch, Russian Academy of Sciences, Novosibirsk, (2) Novosibirsk State University, Novosibirsk* Continuous wave parametric generation near 1 μm with the birefringence phase matching technique is realized for the first time in a polarization maintaining fiber. Frequency up-conversion with 8.6 THz shift from the pump wave and 3.3 % efficiency has been demonstrated experimentally. A fiber optical parametric oscillator with the resonator for the Stokes wave is also tested. Up to 100 mW of anti-Stokes output power is achieved.	**B9-4. Influence of weak local heat on the work of fiber** Rumanov E.N. (1), Yachmeneva O.E. (1) *Institute of Structural Macrokinetics and Material Science RAS, Chernogolovka, Moscow Region* The case of weak absorption of optical intension in the light guide was considered. The middle part of the fiber was heated up to temperature comparable with environment one. Critical value of laser intension was found. This value divides the field of cooling from the field of explosive increase of temperature. The case of weak absorption looks like focal explosion. Unsteady conditions of wave motion are similar to phase waves.
12:00-12:30	Break	
12:30-14:00	**Session A10. Fiber lasers and amplifiers – III**	**Session B10. Optical fibers and components – VII**
12:30-12:45 12:45-13:00	**A10-1. Efficient Bi-doped fiber lasers and amplifiers (Invited)** Bufetov I.A. *Fiber Optics Research Center RAS, Moscow* In this talk we review latest developments of Bi-doped fiber lasers and amplifiers. 10 watt-level Bi fiber lasers have been demonstrated at 1270, 1280, 1330, 1340, 1360 and 1460 nm with efficiency up to 50%. A 24dB gain Bismuth-doped fiber amplifier pumped by a 65mW commercial laser diode at 1310nm was reported. Analysis of simple composition Bi-doped fibers gives a new approach to understanding of nature of Bismuth active centers in glass.	**B10-1. Chalcogenide glasses for mid-infrared range: advances and problems (Invited)** Churbanov M.F., Shiryaev V.S. *Institute of chemistry of high-purity substances of RAS, Nizhny Novgorod* The report contains a review on chalcogenide glasses suitable for preparation of mid-infrared optical fibers. The methods of optical fibers manufacturing taking into account the properties and features of glasses have been considered. The optical and mechanical parameters, performance characteristics of optical fibers, realized and promising examples of their applications have been given.

13:00-13:15	**A10-2. High-power double-clad Er-doped fiber amplifier** Kotov L. V. (1),Likhachev M. E (1), Bubnov M. M. (1), Medvedkov O. I. (1), Lipatov D. S. (2), Vechkanov N.N. (2), Guryanov A.N. (2) *(1) Fiber Optics Research Center RAS, Moscow, (2) Institute of Chemistry of High Purity Substances of RAS, Nizhny Novgorod* In this paper, we propose a new Er-doped fiber design, that allow to create high power double-clad fiber amplifier. A dependence of a slope efficiency on a signal wavelength was researched.	**B10-2. Hollow - core microstructured optical fiber with a negative curvature of the core boundary. Production and investigation.** Kosolapov A.F. (1), Pryamikov A.D. (1), Biriukov A.S. (1), Shiryaev V.S. (2), Astapovich M.S. (1), Snopatin G.E. (2), Plotnichenko V.G. (1), Churbanov M.F. (2), and Dianov E.M. (1) *(1) Fiber Optics Research Center RAS, Moscow (2) Institute of Chemistry of High-Purity Substances of RAS, Nizhny Novgorod* A technologically simple optical fiber cross-section structure with a negative-curvature hollow-core has been practically realized using silica and chalcogenide glasses as the fiber material. The waveguide regime in spectral region near 4 чm in silica-glass hollow-core fiber has been demonstrated. Guidance of 10.6 чm CO2-laser radiation through the chalcogenide-glass hollow-core fiber has been demonstrated for the first time.
13:15-13:30	**A10-3. Holmium-doped fiber laser with the highest quantum efficiency slope.** Sholokhov E.M. (1), Kurkov A.S. (1), Tsvetkov V.B. (1)Marakulin A.V. (2), Minashina L.A. (2), Kosolapov A.F. (3) Medvedkov O.I. (3) *(1) General Physics Institute RAS, Moscow (2) Russian Federal Nuclear Center VNIITF, Snezhinsk (3) Fiber Optics Research Center RAS, Moscow* We have made a set of the lasers based on the fiber doped by holmium ions with the concentration of 1.6·1019 cm-3. Emission wavelengths were of 2.02, 2.05, 2.07, 2.1 micron, and the pumping wavelength was of 1.15 micron. Efficiency slope was measured for all lasers. Maximum efficiency of 0.455 was achieved at 2.05 micron. It is shown that efficiency of generation influence as loss at edge of the vibration band of silica, and active ions clustering.	**B10-3. Nano- and microcrystalline IR-lighguides research and development** Chazov A.I.(1), Zhukova L.V. (1), Korsakov A.S.(1), Vrublevsky D.S.(1), (1)Korsakova E.A. (1) *(1) Ural Federal University named after the first President of Russia B.N. Eltsin, Yekaterinburg* The Ag1-xTlxBr1-yIy, Ag1-xTlxClyBrzI1-y-z crystals are promising for nano- and microstructured IR-lightguides production. The presence of TlI which is heavier expands the spectral transmission range, increases photostability and prevents grain recrystallization in IR-lighguides produced by extrusion. Because of TlI presence the core-shell interface becomes well-defined. There exists a correlation among solid solutions composition, grain size and optical losses on the wavelength 10,6 μm in IR-lightguides.
13:30-13:45	**A10-4. Broad-range self-sweeping of a narrow-line Yb-doped fiber laser** Lobach I.A. (1,2), Kablukov S.I. (1,2), Podivilov E.V. (1,2), Babin S.A. (1,2) *(1) Institute of automation and electrometry SB RAS, Novosibirsk, Russia (2) Novosibirsk state university, Novosibirsk, Russia* The effect of broad-range (16 nm) self-sweeping of a narrow-line (less than 1 pm) in Yb-doped fiber laser has been demonstrated experimentally for the first time. It is found that the effect arises from the self-sustained relaxation oscillations. So a sweeping rate is increased with an increase in pump power and is decreased with increasing cavity length. Based on these results we propose a model describing dynamics of the laser frequency. The model is based on the spatial hole burning effect and the gain saturation in Yb laser transition, and takes into account self-pulsing of the laser.	**B10-4. IR-cables for industrial processes control systems production organization** Korsakov V.S.(1), Zhukova L.V.(1)Kortov S.V. (1), Korsakov A.S. (1),Zhukov V.V.(1), Chazov A.I. (1) *(1)Ural Federal University named after the first President of Russia B.N. Eltsin, Yekaterinburg* Single-mode and multimode IR-lightguides having heightened photostability, expanded transmission range (2-40 μm) and fiber scintillators are developed. It is proposed to set the IR and scintillation cables of wide application production on their base.

13:45-14:00	**A10-5. Bismuth-doped silica glasses synthesized by SPCVD technology** Bazakutsa A.P. (1) Butov O.V. (1) Golant K.M. (1) *(1) Kotel nikov Institute of Radio Engeneering and Electronics of RAS* The SPCVD technology has been applied for the fabrication of for bismuth-doped silica optical fiber preforms . The results of comaprison study of luminescence in various samples of bismuth-doped amorphous silicon dioxide obtained at differente stages of fiber preform fabrication by SPCVD technology are summarised in the present paper.	**B10-5. Nanostructured crystalline fibers with fundamentaly low loss for wavelenght 7-12 um** Butvina L.N.(1), Butvina A.L.(1), Dianov E.M.(1),Lichkova N.V.(2),Zagorodnev V.N.(2) *1 Fiber Optics Research Center RAS Moscow 2 Insitute microelectronics technology RAS Chernogolovka* For the fist time extruded nanostructured crystalline fibers 50AgCl-50AgBr with fundamentally multiphonon low loss 0.04-0.05 dB/m in mid infrared wavelength range 8-11 um.
14:00-15:00	Lunch	
15:00-16:00	Closing ceremony	