Program of the International Symposium "Topical Problems of Biophotonics – 2007"

Saturday, August 4

	(1) Optical Bioimaging	**(2) Nanobiophotonics**	**(3) Neuroimaging**
Co-Chairs:	**Daniel Farkas (USA), Karsten König (Germany), Natalya Shakhova (Russia)**	**Tom Brown (UK), Hiro-o Hamaguchi (Japan), Alexey Zheltikov (Russia)**	**Konstantin Anokhin (Russia), Manabu Tanifuji (Japan)**
	Workshops		
	(6) Photonics in Cancer Management	**(5) Terahertz Imaging and Diagnostics**	**(4) Russian-Japanese Workshop Neuroimaging and Neurodynamics**
Co-Chairs:	**Boris Shakhov (Russia), Viktor Sokolov (Russia)**	**Alexander Shkurinov (Russia), Xi-Cheng Zhang (USA)**	**Tomoki Fukai (Japan), Victor Kazantsev (Russia), Alexey Semyanov (Japan)**
7:00-9:00	**Registration**		
8:00-9:00	**Breakfast**		
9:00	**Departure from Nizhny Novgorod**		
10:00-10:15	**Opening remarks**		
10:15-11:05	**Claude Boccara** (*France*) Light coherence and tissue imaging at various depths **[Plenary-1]**		
11:05-11:55	**Xi-Cheng Zhang** (*USA*) Horizon and hurdle of THz wave biomedical diagnostic and medical imaging **[Plenary-2]**		
11:55-12:10	**Coffee break**		
	(1) Optical Bioimaging	**(5) Terahertz Imaging and Diagnostics**	**(3) Neuroimaging**
	Optical Coherence Tomography	Presiding: **X.-C. Zhang** (*USA*)	**Systems Level Functions and Imaging**
12:10-13:30	**12:10 R. Birngruber (***Germany*) Optical imaging for diagnostics and treatment control in ophthalmology **[Invited 1-1]**	**12:10 Peter Haring Bolívar** (*Germany*) New approaches for high-sensitivity THz biosensing systems **[Invited 5-1]**	**12:20 B.M. Velichkovsky** (*Germany*) From video-based eye-tracking to imaging brain and perceptual consciousness **[Invited 3-1]**
	12:40 V. Gelikonov (*Russia*) Cross polarization OCT **[1-2**]	**12:40 Y. He, F. Lipps, J.R. Knab, J.Y. Chen, and A.G. Markelz** (*USA*) Terahertz determination of protein side chain exposure **[Invited 5-2]**	**13:00 K. Kawamura** (*Japan)* view on the functional disturbance of "split-brain" and "split-mind patients" – problems on cognition and emotion **[3-2]**
	13:00 O.V. Kravtsenyuk (*Greece*) **and Yu.T. Mazurenko** (*Russia*) Spectral heterodyne tomography **[1-3]**	**13:10 A.P. Shkurinov, I.N. Smirnova** (*Russia*), **V.Ya. Gayvoronsky, and O.D. Kachkovsky** (*Ukraine*) The impact of the donor/acceptor structure of the pi-conjugated molecular systems on the THz range transitions efficiency and nonlinear-optical response **[5-3]**	
13:30-15:00	**Lunch**		

Saturday, August 4 / afternoon

13:30-15:00	**Lunch**		
15:00-15:50	**Richard Frackowiak (***UK***)** Imaging genetics and cognitive science **[Plenary-3]**		
	(1) Optical Bioimaging	**(5) Terahertz Imaging and Diagnostics**	**(3) Neuroimaging**
	Optical Coherence Tomography	Presiding: **Bob Miles** (*UK*)	**Cellular Imaging**
16:00-17:00	**16:00 F. Feldchtein, M. Kareta, and N. Tresser** (*USA*) Niris - design choices for a medical OCT system and review of clinical studies **[Invited 1-4]**	**16:00 M. Havenith** (*Germany*) The THz dance of water with biomolecules **[Invited 5-4]**	**16:00 R. Menzel, P. Szyszka, H. Yamagada, and M. Hähnel** (*Germany*) Ca^{2+} imaging of neural activity in an insect brain during learning and memory formation **[Invited 3-3]**
	16:30 N.D. Gladkova, E.V. Zagainova, N.M. Shakhova, and V.M. Gelikonov, and G.V. Gelikonov (*Russia*) Optical coherence tomography: a novel medical imaging modality **[1-5]**	**16:30 M. Hangyo** (*Japan*) Low-frequency dynamics of proteins and related biomolecules probed by THz spectroscopy **[Invited 5-5]**	**16:40 Y.S. Chou, L.C. Jia, Pik-Yin Lai, and C.K. Chan** (*Taiwan*) Synchronized bursting induced by network connectivity in neuronal cultures **[3-4]**
17:00-17:20	**Coffee break**		
	(1) Optical Bioimaging	**(5) Terahertz Imaging and Diagnostics**	**(3) Neuroimaging**
	Optical Coherence Tomography	Presiding: **Gian Piero Gallerano** (Italy)	**Cellular Imaging**
17:20-19:00	**17:20 E.V. Zagaynova, N.D. Gladkova, O.S. Streltsova, and L.B. Snopova** (*Russia*) Optical coherence tomography in endoscopy **[Invited 1-6]**	**17:20 P.M. Corridon and I. Wilke** (*USA*) Time-domain THz-transmission measurements of artificial skin templates and human hair **[Invited 5-6]**	**17:20 N.J. Emptage, L. McGuinness, and M. Cavazzini** (*UK*) Ca^{2+} imaging as a reporter of neural activity in hippocampal neurones **[Invited 3-5]**
	17:50 G. Huettmann, E. Lankenau, D. Boller, and P. Koch (Germany) Endoscopes with extra-corporal scanner for OCT **[1-7]**	**17:50 B. Miles** (*UK*) Terahertz spectroscopy of amorphous materials **[Invited 5-7]**	**18:00 R. Scott, C. Henneberger, and D.A. Rusakov** (*UK*) Use-dependent control of presynaptic Ca^{2+} signaling at individual central synapses [**Invited 3-6]**
	18:10 A.B. Terent'eva and A.V. Shakhov (Russia) OCT in diagnostics of laryngeal pathology **[1-8]**	**18:10 V. Fedorov** (*Russia*) The approach to using terahertz radiation in early medical diagnostics [**5-8]**	**18:40 Discussion**
	18:30 I.A. Kuznetsova, N.M.Shakhova, N.D. Gladkova, E.Yu. Talanova, E.V. Balandina, I.A. Yanvareva, and E.E. Yunusova (*Russia*) Advantages of polarization sensitive optical coherence tomography in diagnostics of cervical pathology **[1-9]**	**18:30 N. Boldyrev and A. Vakhtel** (*Russia*) Modern possibilities of classical FTIR-spectrometry over terahertz range [**5-9]**	
19:00-20:00	**Dinner**		
21:00-23:00	**Welcome party**		

Sunday, August 5

8:00-9:00	**Breakfast**		
9:00	**Arrival in Kostroma**		
9:00-13:30	**Excursion**		
13:30-15:00	**Lunch**		
15:00-15:50	**Vincent Patrick Wallace** (*UK*) Medical applications of terahertz pulsed imaging **[Plenary-4]**		
15:50-16:40	**Juergen Popp** (*Germany*) Raman spectroscopy – a powerful tool for the analysis of complex biological systems **[Plenary-5]**		
16:40-17:00	**Coffee break**		
	(1) Optical Bioimaging	**(5) Terahertz Imaging and Diagnostics**	**(3) Neuroimaging**
	Breast Diagnostics	Presiding: **Martina Havenith** (*Germany*)	**Systems and Network Imaging**
17:00-19:00	**17:00 S.A. Boppart, F.T. Nguyen, A.M. Zysk, E.J. Chaney, J.G. Kotynek, P.A. Johnson, F.J. Bellafiore, and K.M. Rowland** (*USA*) Coherent optical imaging of breast cancer: Translating technology to clinical applications **[Invited 1-10]**	**17:00 G.P. Gallerano** (*Italy*) Reflective terahertz imaging in biological and environmental studies **[Invited 5-10]**	**17:00 K.V. Anokhin** (*Russia*) Imaging of memory systems in the brain by expression of inducible transcription factors **[Invited 3-7]**
	17:30 A.G. Orlova, I.V. Turchin, V.I. Plehanov, N.M. Shakhova, A.A. Artifeksova, A.V. Plehanov, I.V. Balalaeva, E.A. Sergeeva, and V.A. Kamensky (*Russia*) Detection of breast cancer with optical diffuse tomography **[1-11**]	**17:30 Q. Hu** (*USA*) Terahertz quantum-cascade lasers and real-time THz imaging **[Invited 5-11]**	**17:40 H.U. Dodt, N. Jährling** (*Austria*), **C.P. Mauch, U. Leischner, A. Schierloh, M. Eder, W. Zieglgänsberger** (*Germany*)**, and K. Becker** (*Austria*) The glass brain: Visualization of neuronal networks in the whole mouse brain by ultramicroscopy **[Invited 3-8]**
	17:50 S.A. Belkov, G.G. Kochemasov, S.M. Kulikov, N.V. Maslov, S.V. Bondarenko, N.M. Shakhova, I.Yu. Pavlycheva, A. Artifexova (*Russia*), **A. Rubenchik, and L.B. Da Silva** (*USA*) Optical biopsy system for breast cancer diagnostics **[1-12**]	**18:00 V.G. Bespalov and A.A. Gorodetsky** (*Russia*) Ultrabroadband THz holography without reference beam **[Invited 5-12]**	**18:20 O.I. Efimova, A.D. Timoshenko, and K.V. Anokhin** (*Russia*) Development of approaches for optical clearing of the fixed adult brain tissue **[3-9]**
		18:30 C. Zhang (China) T-ray spectroscopy and imaging for drug and explosive detection **[Invited 5-13]**	**18:40 A.A. Lazutkin and K.V. Anokhin** (*Russia*) Development of immunohistochemistry protocol for optical tomography of the whole mouse brain specimens **[3-10]**
19:00-20:00	**Dinner**		
20:00-22:00	**Poster session 1**		

	Poster session 1 **(1) Optical Bioimaging**	**(5) Terahertz Imaging and Diagnostics**	**Poster session 1** **(3) Neuroimaging**
20:00-22:00	**S.A. Belkov, S.V. Bondarenko, and N.V. Maslov** (*Russia*) Monte Carlo-based simulation for the invasive optical probe **[1-13**] **E.B. Balandina, N.D. Gladkova, L.B. Snopova, E.V. Zagaynova, O.S. Streltsova, I.A. Kuznetsova, Yu.V. Fomina, M.M. Karabut, G.V. Gelikonov, and V.M. Gelikonov** (*Russia*) Identification of biotissue structure in polarization-sensitivity optical coherence tomography images [**1-32**] **I.I. Fiks, I.V. Turchin, and E.A. Sergeeva** (*Russia*) Reconstruction of flurophore distribution for fluorescent diffuse tomography based on holder norm **[1-33]** **V.A. Kamensky, I.L. Shlivko, G.A. Petrova, R.R. Iksanov, M.I. Zorkina, K.S. Petrova, and E.N. Derpalyuk** (*Russia*) OCT monitoring of skin changes under the action of topical substances **[1-34**] **M. S. Kleshnin, V.A. Kamensky, A.G. Orlova, V.I. Plehanov, and I.V. Turchin** (*Russia*) Development of experimental setup for diffuse fluorescent tomography [**1-35]** **E.L. Bubis, V.A. Kamensky, A.Z. Matveev, and A.G. Orlova** (*Russia*) Phase contrast imaging using a nonlinear zernike filter [**1-36]** **M.A. Shakhova, G.Yu. Golubiatnikov, V.A. Kamensky, and L.B. Snopova** (*Russia*) Comparative analysis of optical and morphological data at CP OCT monitoring of biotissue alterations [**1-37]** **L.B. Snopova** (*Russia*) Morphological justification of OCT application for visualization of mucous membranes [**1-38]** **I.A. Yanvareva, N.M. Shakhova, and I.A Kuznetsova** (*Russia*) Method of OCT-colposcopy **[1-39]**	Presiding: **Jean-Louis Coutaz** (*France*) **20:30 B.A. Knyazev (***Russia*) Imaging at high-power terahertz free electron laser: methods and applications **[Invited 5-14]** **21:00 H. Kitahara, K. Takano, M. Tani, and M. Hangyo (***Japan*) Medical application of THz tomography [**5-15]** **21:20 A.A. Gorodetsky and V.G. Bespalov** (*Russia*) Resolution power of ultrabroadband THz holography [**5-16]** **21:40 A.V. Muravjov** (*Russia, USA*)**, D.B. Veksler, A. Redo-Sanches, X.-C. Zhang, T.A. Elkhatib, K.N. Salama, and M.S. Shur** (*USA*) Subwavelength terahertz imaging using gated plasma-wave electronics devices [**5-17]** **Poster session 1** **(2) Nanobiophotonics** **L.R. Arslanbaeva, I.G. Meerovich, V.V. Jerdeva, A.P. Savitsky** (*Russia*) The establishment of stable, high-level red fluorescent protein (TurboRFP)-expressing melanoma cell line melKor **[2-21]** **I.G. Meerovich, L.R. Arslanbaeva, V.V. Jerdeva, A.P. Savitsky** (*Russia*) Development of fluorescent tumor cell line based on human melanoma cell line Mel-Kor and red fluorescent protein DsRed-Express for experimental oncology **[2-22]** **K. Kuroda, T. Kuroda, K. Sakoda, G. Kido, and N. Koguchi** (*Japan*) Final-state read-out of an exciton qubit by observing spontaneous emission after resonant excitation [**2-34]** **S.G. Dorofeev, R.B. Vasiliev, P,N. Tananaev, V.G. Desyatkin, T.A. Kuznetsova, K.O. Znamenkov, V.P. Zlomanov, S.M. Deyev, T.A. Zdobnova** (*Russia*) Water-soluble core/shell quantum dots CDSE/CDS for biological labeling [**2-37]**	**Models and Neurodynamics** **V.V. Klinshov and V.I. Nekorkin** (*Russia*) Moderate noise does not affect the memory storage in the network of neural-like units **[3-28]** **T.E. Lyubynskaya and A. S. Nyzhny** (*Russia*) Detection of the preictal state in EEG recordings using neural networks **[3-29]** **N.S. Kuznetsova, I.V. Nuidel, and V.G. Yakhno** (*Russia*) Software model for analyzing structural dynamics of the neuron-like models **[3-30]** **S.B. Parin, A.V. Tsverow, and V.G. Yakhno** (*Russia*) Model of neurochemistry mechanisms of stress and shock based on neuron-like network **[3-31]** **S.A. Polevaya, I.V. Nuidel, S.B. Parin, and V.G. Yakhno** (*Russia*) Research of peak-time dynamics of psychophysical functions of the human **[3-33]** **A.Yu. Simonov and V.B. Kazantsev** (*Russia*) Oscillatory associative memory in neuronal network with a rarefied hebbian connectivity **[3-35]** **Yu.V. Ushakov and V.I. Nekorkin** (*Russia*) Localized patterns of spiking activity in the chain of FitzHugh-Nagumo neurons [3-36]
22:00-23:00	**Evening program**		

Monday, August 6

8:00-9:00	**Breakfast**		
9:00	**Arrival in Uglich**		
9:00-12:00	**Excursion**		
	(6) Photonics in Cancer Management	**(2) Nanobiophotonics**	**(4) Russian-Japanese Workshop**
		Raman Microspectroscopy and Bioimaging	**Neurodynamics**
12:00-13:30	**12:00 G. Huettmann** (*Germany*) The potential of fluorescence diagnosis, OCT, and *in-vivo* microscopy for the diagnosis of malignant and pre-malignant lesions **[Invited 6-1]**	**12:00 S. Xie** (*USA*) CARS microscopy: Coming of age **[Invited 2-1]**	**12:00 T. Fukai and H. Okamoto** (*Japan*) Balanced synaptic input improves temporal integration performance of cortical network models **[Invited 4-1]**
	12:30 E.Ph. Stranadko, A.I. Lobakov, U.V. Vasilenko, M.V. Riabov, A.V.Mokin, T.M. Ibragimov, and S.W. Tyurin (*Russia*) Photodynamic therapy for papilla of Vater cancer and common bile duct cancer **[6-2**]	**12:30 V. Shashilov, M. Xu, V.V. Ermolenkov, L. Fredriksen and I.K. Lednev** (*USA*). Raman spectroscopy and microscopy for protein structural characterization at all stages of fibrillation **[Invited 2-2]**	**12:30 V. Nekorkin** (Russia) Phase clusters in oscillatory models of neuronal systems **[Invited 4-2]**
	12:50 V.A. Purtskhvanidze, A.A. Radaev, and E.Ph. Stranadko (*Russia*) The experience of using photodynamic therapy with chlorine photosensitizers for the treatment of skin cancer at a municipal polyclinic **[6-3**]	**13:00 D.A. Akimov, T. Meyer, S. Chatzipapadopoulos, N. Tarcea, M. Schmitt, and J. Popp** (*Germany*) Application of laser scanning microscopy to resonant and nonresonant CARS imaging of biological objects [**2-3]**	**13:00 A. Morrison and M. Diesmann** (*Japan*) Large-scale simulations of plastic cortical networks **[Invited 4-3]**
	13:10 M.L. Gelfond (*Russia*) PDT opportunities in lung cancer treatment **[6-4**]		
13:30-15:00	**Lunch**		
	(6) Photonics in Cancer Management	**(2) Nanobiophotonics**	**(4) Russian-Japanese Workshop**
		Raman Microspectroscopy and Bioimaging	**Neurodynamics**
15:00-17:00	**15:00 V.V. Sokolov, E.V. Filonenko, D.G. Sukhin, and V.I. Chissov** (*Russia*) Prolonged and multicourse photodynamic therapy of malignant tumors: 12-years of clinical trials in P.A. Hertzen Moscow Research Oncology Institute **[Invited 6-5]**	**15:00 M. Schmitt (***Germany***), B. Dietzek (***USA***), S. Tschierlei, G. Hermann, S. Rau, and J. Popp** (*Germany*) Femtosecond time-resolved spectroscopy on biological and artificial photoreceptor chromophores **[Invited 2-4]**	**15:00 V. Yakhno** (*Russia*) Dynamic modes of neuron-like processing systems **[Invited 4-4]**
	15:30 E.V. Filonenko, V.V. Sokolov, V.I. Chissov, E.A. Lukyanets, and G.N. Vorozhtsov (*Russia*) Photodynamic therapy (PDT) and endoscopical resection (ER) of early esophageal and gastric cancer **[6-6**]	**15:30 S.-P. Tai, Y. Wu, D.-B. Shieh, C.-Yu Chen, F.-H. Chang, and C.-K. Sun** (*Taiwan*) Nanoparticle-based biomolecular imaging using third harmonic generation microscopy **[Invited 2-5]**	**15:30 A. Cichocki** (Japan) Detection of hidden variables, factors and features **[Invited 4-5]**
	15:50 A.A. Stratonnikov, V.B. Loschenov, A.V. Ryabova, S.Y. Vasilchenko, T.A. Badul, V.P. Pashinin, T.V. Kononenko, A.Ye. Yermakov, and V.I. Konov (*Russia*) Pulsed laser tumor photothermolysis sensitized by light absorbing nanoparticles **[6-7**]	**16:00 A.B. Fedotov, A.A. Ivanov, M.V. Alfimov, and A.M. Zheltikov** (Russia) Photonic-crystal fibers for biosensing and bioimaging **[2-6]**	**16:00 B.P. Bezruchko, D.A. Smirnov, and T.V. Dikanev** (*Russia*), C.M. van Rijn (*The Netherlands*), E.U. Sitnikova, and G.D. Kuznetsova (*Russia*) Thalamo-cortical interactions in epileptic brains quantified with granger causality analysis **[Invited 4-6]**
	16:10 E.V. Golikov (*Russia*) Endoscopic fluorescence-guided surgery of malignant glioma: research beginning		**16:30 S. Gruen** (Japan) Signatures of neuronal interaction in parallel spike trains and their relation to the local field potential **[Invited 4-7]**
17:00-17:20	**Coffee break**		

	(6) Photonics in Cancer Management	(2) Nanobiophotonics	(4) Russian-Japanese Workshop
		Fluorescent Nanoparticles and Biophotonics	**Neurodynamics**
17:20-19:00	**17:20 R. Birngruber** (*Germany*) Feedback controlled laser therapy in ophthalmology **[6-8]**	**17:20 A.P. Savitsky** (*Russia*) Photophysical properties of GFP-like fluorescent proteins **[Invited 2-20]**	**17:20 Y. Ikegaya and N. Matsuki** (*Japan*) Functional multineuron calcium imaging and large-scale spike trains **[Invited 4-8]**
	17:40 A.V. Maslennikova, N.D. Gladkova, I.V. Balalaeva, A.M. Ermolaeva, and G.V. Gelikonov (*Russia*) Chemotherapy and radiation induced mucositis: operational analysis of oral mucosa using optical coherence tomography **[6-9**]	**17:50 T. Mano, M. Yamagiwa, T. Kuroda, T. Ochiai, K. Kuroda, T. Tateno, J. Kim, F. Minami, T. Noda, K. Watanabe, M. Kawabe, S. Sanguinetti** (*Italy*)**, K. Sakoda, N. Koguchi, and G. Kido** (*Japan*) Highly luminescent GaAs quantum dots and quantum rings by droplet epitaxy **[Invited 2-8]**	**17:50 G.V. Osipov and M.A. Komarov** (*Russia*) Variety of synchronous states in network of neuron-like oscillators **[Invited 4-9]**
	18:00 S.A. Shevchik, G.V. Zhukov, I.N. Golovanov, K.G. Linkov, V.V. Barun, B.Y. Kogan, A.P. Ivanov, and V.B. Loschenov (*Russia*) Technique for temperature control during hyperthermia **[6-10**]	**18:20 O.M. Sarkisov, V.A. Nadtochenko, and V.V. Nikandrov** (*Russia*) Selective photocatalytic systems on the basis of nanosize semiconductor particles with enzymes **[Invited 2-9]**	**18:20 V.B. Kazantsev** (*Russia*) **and A.V. Semyanov** (*Japan*) Model of neuronal signalling guided by patterns of diffuse transmitters **[Invited 4-10]**
	18:20 A.V. Shakhov and A.B. Terent'eva (*Russia*) Follow-up results of laryngeal carcinoma **[6-11**]		
19:00-20:00	**Dinner**		
20:00-22:00		**Round Table Discussion "THz imaging and diagnostics"**	**21:00 A. Shestakova** (*Finland*) Contemporary master program in neuroscience in the University of Saint-Petersburg. The EU TEMPUS project
20:00-21:30	**Sponsor session**		
20:00-20:30	**R. Wolf**, Spectra-Physics, A Division of Newport Corp. (*USA*) Recent advances in ultrafast laser technology for bioimaging		
20:30-21:00	**P. Amazeen**, Imalux Corporation (*USA*) Imalux Niris: Experience in commercialization of OCT		
21:00-21:30	**V. Ganicheva**, ATC Semiconductor Devices (*Russia*) Development of medical laser technologies in ATC-Semiconductor Devices		
22:00-23:00	**Evening program**		

Tuesday, August 7

8:00-9:00	**Breakfast**		
9:00-9:50	**Karsten Koenig** (*Germany*) Multiphoton tomography and two-photon microendoscopy **[Plenary-6]**		
9:50-10:40	**Tadaharu Tsumoto** (*Japan*) Imaging in two worlds: trafficking molecules *in vitro* and activities of different neurons *in vivo* **[Plenary-7]**		
10:40-11:30	**Robert Hoffmann** (*USA*) Multicolor, whole-body cellular imaging with fluorescent proteins **[Plenary-8]**		
11:30-12:00	**Coffee break**		
	(1) Optical Bioimaging	**(5) Terahertz Imaging and Diagnostics**	**(3) Neuroimaging**
	Fluorescence Diagnostics	Presiding: **V.P. Wallace** (*TeraView Ltd*)	**New Approaches in Optical Neuroimaging and Neurodynamics**
12:00-14:00	**12:00 J. Ripoll** (*Greece*) Optical tomography: 3D *in-vivo* imaging of fluorophore distribution in tissues **[Invited 1-14]**	**12:00 J.-L. Coutaz, F. Garet, D. Armand, Y. Laamiri, and M. Nazarov** (*France*) Guiding THz waves in periodic structures **[Invited 5-18]**	**12:00 D.V. Ossipov, W. Hempell, and M. Tewinkel** (*Germany*) FRAP, FLIP, TIRFM & Co. – exciting abbreviations of modern confocal microscopy **[Invited 3-11]**
	12:30 S.M. Devev, E.A. Aktsipetrova, T.G. Balandin, E.F. Edelweiss, E.N. Lebedenko, E. Moiseeva, E.G. Semenyuk, O.A. Stremovskiy, and T. Zdobnova (*Russia*) Fluorescent visualization of tumor cells **[Invited 1-15]**	**12:30 M.I. Bakunov, S.B. Bodrov, and A.V. Maslov** (*Russia*) Theory of optical-to-terahertz conversion in a slab of electro-optic material **[5-20]**	**12:40 V.A. Kalatsky** (*USA*) Cortical maps of sensory world: Fourier approach to optical imaging **[Invited 3-20]**
	13:00 V.V. Sokolov, N.N. Bulgakova, E.V. Filonenko, L.V. Telegina, D.G. Sukhin, A.B. Marmarova, R.V. Ulianov, A.A. Gladyshev, and V.V. Chissov (*Russia*) Fluorescence imaging and spectroscopy for cancer detection **[1-16]**	**12:50 M.V. Tsarev and A.I. Korytin** (*Russia*) Polarization and carrier-to-envelope phase offset control of terahertz pulses by means of frustrated total internal reflection **[5-21]**	**13:20 I.Y. Tyukin (*Russia*), D. Rijlaarsdam (*The Netherlands*), Cees van Leeuwen** (*Japan*)**, H. Nijmeijer (*The Netherlands*), and A. Semyanov** (*Japan*) Neural oscillators with diffusive coupling: does the leakage of neurotransmitters matter? **[Invited 3-21]**
	13:20 I.V. Turchin, A.P. Savitsky, V.A. Kamensky, V.I. Plehanov, A.G. Orlova, M.S. Kleshnin, M.V. Shirmanova, and I.I. Fiks (Russia) Fluorescence diffuse tomography for detection of RFP-expressed tumors in small animals **[1-17]**		
	13:40 O.V. Kravtsenyuk, J. Ripoll, A.B. Konovalov, V.V. Vlasov, and V.V. Lyubimov (*Greece)* Diffuse optical tomography: Methods of reconstruction and image postprocessing **[1-18]**		
13:00	**Arrival in Moscow**		
14:00-15:00	**Lunch**		
19:00-20:00	**Dinner**		
21:00	**Departure from Moscow**		
22:00-23:00	**Evening program**		

8:00-9:00	Breakfast		
	(1) Optical Bioimaging	**(2) Nanobiophotonics**	**(4) Russian-Japanese Workshop**
	Polarization Light Scattering Spectroscopy and Speckle Imaging	**Nanoparticles for Biomedical Applications**	**Neuroimaging**
9:00-11:00	**9:00 V.V. Tuchin** (Russia) Polarization-sensitive optical technologies in tissue spectroscopy and imaging **Invited [1-19]**	**09:00 V.Yu. Timoshenko, A.A. Kudryavtzev, T.Yu. Bazylenko, E.A. Konstantinova, L.A. Osminkina, A.S. Vorontsov, and P.K. Kashkarov** (*Russia*) Luminiscent porous silicon as photosensitizer of singlet oxygen for biomedical application **[Invited 2-10]**	**09:00 M. Tanifuji** (*Japan*) Visualization of neural activities elicited by object images in visual association cortex with optical intrinsic signal imaging and dense multiple electrode array **[Invited 4-11]**
	09:30 F. Scheffold, A.C. Völker, P. Zakharov, M. Wyss, F. Haiss, A. Buck, and B. Weber (*Switzerland*) Laser speckle imaging with applications to monitor cerebral blood flow *in-vivo* **[Invited 1-20]**	**09:30 K. Sokolov, J. Aaron, S. Kumar, T. Larson, K. Travis, and N. Harrison** (*USA*) Plasmonic nanoparticle platform for carcinogenesis imaging in situ **[Invited 2-11]**	**09:30 I.V. Bondar, R.S. Ivanov, and K.A. Saltykov** (*Russia*) Oblique effect: optical imaging of orientation detectors representation in cat primary visual cortex [**Invited 4-12]**
	10:00 A.V. Mjakov, P.D. Agrba, N.M. Shakhova, and V.A. Kamensky (*Russia*) Polarized reflectance spectroscopy **[1-21]**	**10:00 I. Balalaeva, V. Kamensky, A. Orlova, V. Plekhanov, A. Sergeev, I. Turchin, T. Zdobnova, M. Shirmanova, E. Zagainova, M. Kirilin, S. Deyev, and A. Savitsky** (*Russia*) Study of image contrast enhancement induced by nanoparticles in optical tomography and microscopy **[Invited 2-12]**	**10:00 H. Kamiguchi** (*Japan*) The role of Ca2+ signals in growth cone guidance **[Invited 4-13]**
	10:20 A.V. Belikov and O.A. Smolyanskaya (*Russia*) Influence of polarizing properties of adipose tissue and lipides on temperature **[1-22]**	**10:30 S.S. Karshieva, N.V Andronova, H.M. Treshalina, A.L. Nikolayev, B. Ya. Kogan, and V.M. Rudoy** (*Russia*) Nanoparticles with hyperthermia in cancer treatment: yes or no? **[2-13]**	**10:30 V.I. Popov, N.I. Medvedev, I.V. Kraev, and I.V. Patrushev** (*Russia*) Serial ultrathin sectioning for three-dimensional visualization and quantification of hippocampal synapses in neuronal plasticity **[Invited 4-14]**
	10:40 G.Yu. Golubiatnikov, V.A. Kamensky, M.A. Shakhova, L.B. Snopova, A.B. Terentjeva, and N.Yu. Ignatieva (*Russia*) PS-OCT monitoring of IR-laser and RF treatment of in vitro biotissues **[1-23]**		
11:00-11:20	**Coffee break**		

Wednesday, August 8

	(1) Optical Bioimaging	(2) Nanobiophotonics	(4) Russian-Japanese Workshop
	Drying Drops Technology	**Nanoparticles for Biomedical Applications**	**Neuroimaging**
11:20-13:30	**11:20 T. Yakhno, A. Sanin** (*Russia*), **C. Vacca, F. Falcione** (*USA*), **and O. Shaposhnikova** (*Russia*) Drying drops – 1: Physical-chemical basis of structural evolution in biological liquids **[1-24]**	**11:20 I.V. Balalaeva, M.V. Shirmanova, E.V. Zagainova, A.G. Orlova, I.V. Turchin, and V.A. Kamensky** (*Russia*) *In vivo* imaging of photosensitizer and QDs-labeled tumors in small animals by fluorescence difuse tomography **[2-14]**	**11:20 H. Koizumi, A. Maki, M. Kiguchi, H. Sato, A. Obata, T. Katsura, H. Atsumori, K. Utsugi, and K. Sagara** (*Japan*) Novel technologies originating from nirs brain-function imaging: optical brain-machine interface and wearable optical topography **[Invited 4-15]**
	11:40 A. Sanin, T. Yakhno (*Russia*), **C. Vacca, F. Falcione** (*USA*), **and O. Shaposhnikova** (Russia) "Drying drops – 2: Technical approach for registering the dynamics of phase transitions **[1-25]**	**11:40 M.L. Sinyaeva, Ad.A. Mamedov, S.B. Korovin, V.I. Pustovoy, S.Yu. Vasilchenko, A.I. Volkova, V.B. Loschenov, and V.I. Konov** (*Russia*) The use of aluminium phthalocyanine nanoparticles for detecting teeth enamel microdamages *in-vitro* and *in-vivo* **[2-15]**	**11:50 L. Khaspekov** (*Russia*) Fluorescent imaging in brain cell and tissue culture **[Invited 4-16]**
	12:00 T. Yakhno (*Russia*), **C. Vacca** (*USA*), **A. Sanin, F. Falcione** (*USA*), **and O. Shaposhnikova** (Russia) Drying drops – 3: Some experimental data and possible applications of the technology **[1-26**]	**12:00 A.Yu. Semenov and S.K. Chamorovsky** (*Russia*) Control of Electron Transfer Reactions in Photosynthetic Reaction Centers by Dielectric Permittivity **[Invited 2-16]**	**12:20 S. Grebenyuk** (*Japan*), **D.A. Rusakov** (*UK*)**, and A.V. Semyanov** (*Japan*) Coincidence detection on extrasynaptic NMDA receptors **[Invited 4-17]**
		12:30 T.Yu. Bazylenko, R.A. Abidulina, A.I. Efimova, E.A. Konstantinova, L.A. Osminkina, A.S. Vorontsov, Yu.V. Raybchikov, A.A. Ezhov, P.K. Kashkarov, and V.Yu. Timoshenko (*Russia*) Functional silicon nanomaterials for biomedical purpose **[2-17]**	**12:50 I.V. Mukhina** (*Russia*) Cultured neuronal networks as models for the study of information processing **[Invited 4-18]**
		12:50 G.A. Meerovich, I.G. Meerovich, D.G. Gurevich, V.G. Pevgov, N.A. Oborotova, E.A. Lukyanets, V.B. Loschenov, and A.Yu. Baryshnikov (*Russia*) Accumulation of liposomal photosensitizer tiosens in tumor: influence of vesicle size distribution **[2-18]**	
		13:10 M.V. Shirmanova, E.V. Zagainova, V.A. Kamensky, A.G. Orlova, I.V. Balalaeva (*Russia*) Gold nanoparticles as a contrast agent for OCT **[2-19]**	
13:30-15:00	**Lunch**		
15:00-15:50	**Herbert Stepp** (*Germany*) Fluorescence guided resection and PDT of malignant glioma using 5-aminolevulinic acid **[Plenary-9]**		
15:50-16:40	**Pavel Balaban** (*Russia*) Optical imaging of pre- and postsynaptic events in simple nervous system **[Plenary-10]**		
16:40-17:00	**Coffee break**		

Wednesday, August 8 / evening

	(1) Optical Bioimaging	(2) Nanobiophotonics	(3) Neuroimaging
		Nanoparticles and Biophotonics	**Neurodynamics: Models, Oscillations and Synchronization**
17:00-19:00	**17:00 V.V. Tuchin, A.A. Gavrilova, E.A. Genina, A.N. Bashkatov, A.B. Pravdin, I.V. Yaroslavsky, and G.B. Altshuler** (*Russia*) Synergetic effects in skin optical clearing at combined action of lid- and chemically-enhanced OCA diffusivity **[1-27]**	**17:00 V. Bagratashvili** (*Russia*) Supercritical fluid technologies on nanoparticle fabrication **[Invited 2-7]**	**17:00 A.A. Zhdanov** (*Russia*) Neuron as self-learning system of pattern recognition. Adaptive control in nervous system **[Invited 3-15]**
	17:20 V.V. Chernov and R.F. Mishanov (*Russia*) Sonoluminescence of water and biological liquids **[1-28]**	**17:30 H. Kano and H. Hamaguchi** (*Japan*) Coherent Raman bioimaging using a supercontinuum light source **[Invited 2-23]**	**17:40 D.A. Smirnov, U. Barnikol, B.P. Bezruchko, and P.A. Tass** (*Russia*) Parkinsonian resting tremor: Reconstruction of model equations and characterization of coupling **[3-16]**
	17:40 Yu.G. Smetanin, V.K. Salakhutdinov, A.I. Alehin, and E.A. Sivachenko (*Russia*) Method of longitudinal stereoscopy for 3D visualization of endoscopic images **[1-29**]		**18:00 D.G. Zakarov and V.I. Nekorkin** (*Russia*) Synchronisation of two non-identical inferior olive cells **[3-17]**
	18:00 Yu. Vladimirov (*Russia*) Chemiluminescence as a method to estimate oxidative stress in experimental and clinical investigations **[1-30**]		**18:20 D.V. Kasatkin and V.I. Nekorkin** (*Russia*) Secondary spiking in excitable cell model **[3-18]**
	18:20 G.E. Stolarenko, D. Doroshenko, and V.K. Salakhutdinov (*Russia*) Some problems for high resolution Fundus topology visualization **[1-31]**		**18:40 Discussion**
19:00-20:00	**Dinner**		
20:30-22:00	**Poster session 2**		
22:00-23:00	**Evening program**		

	Poster session 2		
	(1) Optical Bioimaging	**(2) Nanobiophotonics**	**(3) Neuroimaging**
20:30-22:00	**V.V. Egorenkov, V.M. Gelfond, and N.V. Leonenkova** (*Russia*) Modern anesthesia and intraoperative PDT in prevention of postoperative complications at esophageal and stomach cancer **[6-12]** **V.M. Gelfond and M.L. Gelfond** (*Russia*) Preliminary clinical results of chemosensitizer blood photomodification with chlorin E6 (photoditazin) at the widespread malignant tumors **[6-13]** **A.V. Ivanov and S.D. Zakharov** (*Russia*) New trends in development of photodynamic therapy techniques **[6-14]** **O.S. Streltsova, E.V. Zagaynova, N.D. Gladkova, D.P. Pochtin, and E.A Tararova** (*Russia*) The possibility of minimizing the number of biopsies in the urinary bladder by use of optical coherence tomography **[6-15]** **E.Ph. Stranadko, V.A. Purtskhvanidze, A.A. Radaev, M.V. Rjabov, and T.M. Ibragimov** (*Russia*) Photodynamic therapy of skin cancer in hard-to-treat places **[6-16]** **A.A. Shakhov, A.A. Bureev, A.A. Tumanov, and Yu.P. Isakov** (*Russia*) Biophotonics methods in Nizhny Novgorod Cancer Research Center (NNCRC) **[6-17]** **P.I. Rykhtik and E.B. Shakhova** (*Russia*) Monitoring and assessing results of organ preserving treatment: light or sound? **[6-18]** **O.S. Streltsova, E.V. Zagaynova, N.D. Gladkova, L.B. Snopova, and D.P. Pochtin** (*Russia*) Intraoperative verification of the state of urinary bladder mucosa in perifocal tumor regions during transurethral resection **[6-19]**	**J. Podskocova, T. Nedelcev, G. Kollarikova, I. Krupa, I. Lacik, and D. Chorvat Jr.** (*Slovakia*) Structural and functional properties of well-defined polymer membranes used in transport regulation of nanoscale bioactive substances: a confocal fluorescence microscopy study **[2-32]** **B.Ya. Kogan, A.A. Pankratov, B.N. Khlebtsov, N.G. Khlebtsov, A.V. Butenin, Yu.B. Zolotavkina, R.I. Yakubovskaya, and G.N. Vorozhtsov** (*Russia*) Laser heating of the gold nanoparticles inhibits tumor growth **[2-33]** **S.N. Pleskova, Yu.Yu. Gushina, and I.V. Balalaeva** (*Russia*) The influence of quantum dots on the morphology of neutrophil granulocytes **[2-35]** **T.A. Zdobnova, T.G. Balandin, E.F. Edelveys, S.G. Dorofeev, R.B. Vasiliev, I.V. Balalaeva, and S.M. Deyev** (*Russia*) Immunofluorescent labeling of cancer marker HER2 with semiconductor quantum dots **[2-36]** **N.M. Bityurin , E.V. Chelnokov, N.V. Sapogova, and L.V. Soustov** (*Russia*) Model for XeCl laser induced photoaggregation in water solution of eye lens proteins	**L.E. Frumkina and L.G. Khaspekov** (*Russia*) Ultrastructural reorganization of hippocampal synapses under blockade of type 1 cannabinoid receptors **[3-26]** **Kei M. Igarashi, R. Uma Maheswri, H. Watanabe and M. Tanifuji** (*Japan*) Optical coherence tomography in functional brain imaging studies **[3-27]** **A.S. Pimashkin, A.A. Lebedinskiy, V.B. Kazantsev** (*Russia*), **and A.V. Semyanov** (*Japan*), Activity patterns and correlated cell signaling in astrocytic network **[3-32]** **Y. Minagawa-Kawai** (*UK*), **A. Shestakova** (*Finland*), **H. van der Lely, E. Kushnerenko, J. Meek, J. Hebden, N. Everdell** (*UK*), **and E. Dupoux** (*France*) Newborn's brain responses to temporally and spectrally different sound changes measured with NIRS **[3-34]**

Thursday, August 9

8:00-9:00	**Breakfast**
9:00	**Arrival in Yaroslavl**
9:00-13:30	**Excursion**
13:30-15:00	**Lunch**

15:00-15:50	**Stefan Andersson-Engels** (*Sweden*) 3D Fluorescence imaging for assessment of molecular distribution - applications to molecular imaging and photodynamic therapy dosimetry **[Plenary-11]**		
15:50-16:40	**Daniel L. Farkas** (*USA*) Multimode optical bioimaging for translational research **[Plenary-12]**		
16:40-17:00	**Coffee break**		
		(2) Nanobiophotonics	**(3) Neuroimaging**
		Biosensing and Nanoparticles Synthesis	**Cellular Imaging**
17:00-19:00		**17:00 M.P. MacDonald, I. Andreev, G. Milne, R. Rhodes, L. Paterson, A. Riches, K. Dholakia, R.L. Smith, and G.C. Spalding** (*UK*) Sorting in optically produced potential energy landscapes **[Invited 2-24]**	**17:00 J. Marchaland, C. Cali, and P. Bezzi** (*Switzerland*) Studying secretion with imaging technologies: new advances on the role of astrocytes **[Invited 3-12]**
		17:30 T. Melvin, L. Dyadyusha, H. Yin, J.S. Wilkinson, J. Baumberg, and T. Brown (*University of Southampton*) Nanoscale approaches for optical biosensing **[Invited 2-25]**	**17:40 C.H. Chang, T.Y. Tsong, P.Y. Lai, and C.K. Chan** (*Taiwan*) Effects of glia on the synchronized bursting of cortical neuronal cultures **[Invited 3-13]**
		18:00 P.I. Nikitin, T.I. Ksenevich, M.P. Nikitin, and B.G. Gorshkov (*Russia*) Optical picoscopes, New tools for biosensing [**Invited 2-26]**	**18:20 V.P. Zinchenko and A.V. Berezhnov** (*Russia*) Calcium waves and pulsatile ATP release from cells **[Invited 3-14]**
		18.30 N. Sapogova, N. Yakimovich, A. Alexandrov, T. Gracheva, L. Smirnova, and N. Bityurin (*Russia*) UV induced formation of gold nanoparticles in solid polymeric matrices [**2-27]**	
19:00-20:00	**Dinner**		
20:30-23:00	**Evening program**		

Friday, August 10

8:00-9:00	**Breakfast**		
9:00-9:50	**Sanford Asher** (*USA*) Photonic crystal chemical sensing materials **[Plenary-13]**		
9:50-10:40	**Tim Bliss** (*UK*) Network approaches to the study of hippocampus-dependent learning **[Plenary-14]**		
10:40-11:00	**Coffee break**		
	(1) Optical Bioimaging	**(2) Nanobiophotonics**	**(3) Neuroimaging**
		Laser Tweezing and Micromanipulation	**Cellular Imaging**
11:00-13:30		**11:00 C.T.A. Brown, B. Agate, D. Stevenson, X.T Tsampoula, V. Garcés-Chávez, L. Paterson, F.J. Gunn-Moore, A. Riches, W. Sibbett, and K. Dholakia** (*UK*) Laser-based transfection of mammalian cells **[Invited 2-28]**	**11:00 L.B. Cohen** (*USA*), **R. Homma, O. Garaschuk, and A. Konnerth** (*Germany*) Imaging juxtaglomerular responses to odorants in mice using two-photon microscopy **[Invited 3-22]**
		11:30 D. Chorvat Jr. and A.Chorvatova (*Slovak Republic*) Cell: a biological laser? **[Invited 2-29]**	**11:40 S.A. Kirov, W.C. Risher, D.A. Ard** (*USA*)**, and R.D. Andrew** (*Canada*) Two-photon microscopy: real-time imaging of single neurons and glia deep in cortex during ischemia **[Invited 3-23]**
		12:00 V.B. Loschenov, A.A. Stratonnikov, A.V. Ryabova, T.A. Savelieva, S.Y. Vasilchenko, A.Ye. Yermakov, G.N. Worozhsov, V.I. Konov (*Russia*) Methods of optical diagnostic and therapy with application of photosensitizers in molecular and nanoparticle forms **[Invited 2-30]**	**12:20 L.P. Nezlin** (*Russia*) Imaging of Xenopus laevis olfactory neurons in a laser scanning microscope: advantages, problems and perspectives **[Invited 3-24]**
		12:30 Q. Xing, J. Gong, H. Li, F. Li, Y. Li, X. Zhao, L. Chai, Q. Wang, and A. Zheltikov (*China*) Femtosecond laser induced cell fusion **[Invited 2-31]**	**13:00 S.V. Salozhin and P.M. Balaban** (*Russia*) Endogenous cannabinoids modulate calcium influx into presynaptic terminals of primary sensory neurons in CNS of H. lucorum [**3-25**]
13:30-15:00	**Lunch**		
15:50-16:40	**Round Table Discussions**		
16:40-17:00	**Coffee break**		
17:00-18:30	**Closing Session**		
18:30-19:30	**Dinner**		
19:30	**Arrival in Makariev**		
19:30-21:00	**Excursion**		
22:00-24:00	**Party**		

Saturday, August 11

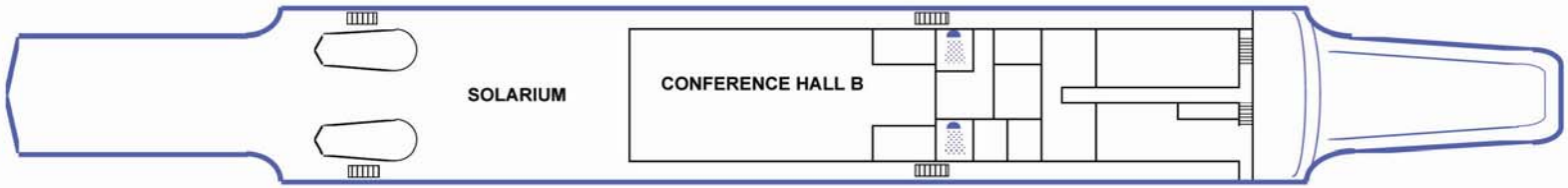
8:00-9:00	**Breakfast**
10:30-13:00	**Visit to IAP RAS**
13:30-15:00	**Lunch**
15:00-17:30	**Sightseeing in Nizhny Novgorod**

"GEORGIY ZHNUKOV"

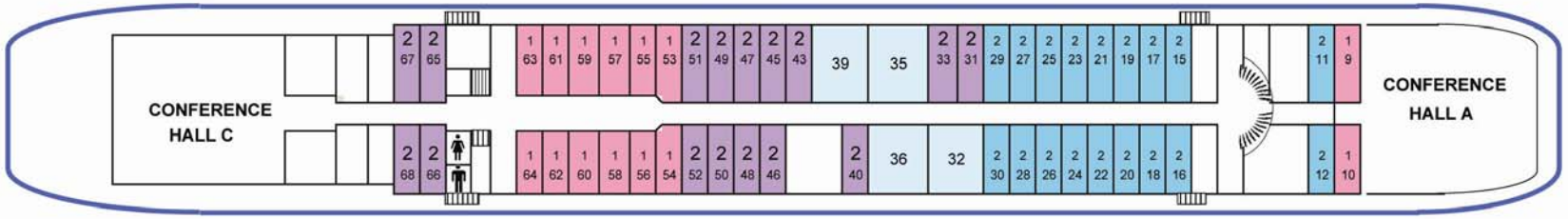
"Георгий Жуков"

DECK MAP

SUN DECK



BOAT DECK



PROMENADE DECK

MAIN DECK