A.M. Prokhorov General Physics Institute
Russian Academy of Sciences

The 50th Anniversary of Lasers

INTERNATIONAL SYMPOSIUM ON
LASER MEDICAL APPLICATIONS

Chairman – Prof. Ivan Shcherbakov (Russia)

Program Committee Co-Chairmen – Prof. Boris Denker (Russia),
Prof. Oleg Teodorovich (Russia)

Organizing Committee Chairman – Dr. Vladimir Pustovoy (Russia)

PROGRAM

Moscow
July 5–July 6, 2010

Contents

Symposium Chairman – Prof. Ivan Shcherbakov (Russia)

International Program Committee

Co-Chairmen – Prof. Boris Denker (Russia), Prof. Oleg Teodorovich (Russia)

G. Altshuler (USA), V. Artyushenko (Russia), O. At'kov (Russia), S. Avetisov (Russia), L. Avramov (Bulgaria), N. Bulgakova (Russia), A. Douplik (Germany), S. Garnov (Russia), A. Geinitz (Russia), I. Herczku (Hungary), A. Ivanov (Russia), D. Kochiev (Russia), O. Kompanets (Russia), V. Konov (Russia), I. Kovsh (Russia), A. Kuznetsov (Russia), V. Loschenov (Russia), A. Nerobeev (Russia), V. Neroev (Russia), V. Ochkin (Russia), V. Panchenko (Russia), K. Petermann (Germany), M. Pojaritski (Russia), A. Priezzhev (Russia), I. Shugailov (Russia), V. Smirnov (Russia), V. Sokolov (Russia), R. Steiner (Germany), H. Stepp (Germany), Kh. Takhchidi (Russia), V. Trubilin (Russia), V. Tsvetkov (Russia), V. Tuchin (Russia), S. Vartapetov (Russia), Q. Wang (China)

Organizing Committee

Chairman – Dr. Vladimir Pustovoy (Russia)

N. Gruzdev (Russia), N. Khakamova (Russia), V. Khavaev (Russia), M. Lyamshev (Russia), M. Lagiev (Russia), A. Mineev (Russia), B. Zubov (Russia)

Events

July 5, Monday

08.00–08.30 Registration

08.30–08.40 Opening ceremony

08.40–09.00 Prof. I. Shcherbakov, “The 50th anniversary of lasers”

09.00–16.30 Sections (A, B, Tutorial course, C) sessions

16.30–17.45 Joint poster session

18.00–21.00 Dinner on the river ship board

09.00–16.00 Tabletop Exhibition

July 6, Tuesday

09.00–16.50 Sections (B, D) sessions

16.55–17.10 Closing

09.00–16.00 Tabletop Exhibition

LMA'2010 TIME TABLE

July 5, Monday			July 6, Tuesday	
8.00–8.30	**Registration**			
8.30–8.40	**Opening ceremony**			
8.40–9.00	**Prof. I. Shcherbakov, "The 50th anniversary of lasers"**			
9.00–10.30	***Section sessions***		***9.00–10.30***	***Section sessions***
A. Optical Biomedical Diagnostics	**B.** Clinical Laser Applications	**C.** Laser–Tissue Interaction	**D.** Advanced Laser Systems for Medicine	**B.** Clinical Laser Applications
10.30–10.45	***Coffee break***		***10.30–10.45***	***Coffee break***
10.45–12.15	***Section sessions***		***10.45–12.15***	***Section sessions***
A. Optical Biomedical Diagnostics	**B.** Clinical Laser Applications	**C.** Laser–Tissue Interaction	**D.** Advanced Laser Systems for Medicine	**B.** Clinical Laser Applications
12.15–13.15	***Lunch***		***12.20–13.30***	***Lunch***
13.15–14.45	***Section sessions***		***13.30–15.00***	***Section sessions***
A. Optical Biomedical Diagnostics	Tutorial course	**C.** Laser–Tissue Interaction	**D.** Advanced Laser Systems for Medicine	**B.** Clinical Laser Applications
14.45–15.00	***Coffee break***		***15.00–15.20***	***Coffee break***
15.00–16.30	***Section sessions***		***15.20–16.50***	***Section sessions***
A. Optical Biomedical Diagnostics	Tutorial course	**C.** Laser–Tissue Interaction	**D.** Advanced Laser Systems for Medicine	**B.** Clinical Laser Applications
16.30–17.45	***Joint Poster session***		**16.55–17.10 Closing**	
18.00–21.00	***Dinner on the river ship board***			
09.00–16.00	***Tabletop Exhibition***		***09.00–16.00***	***Tabletop Exhibition***

SECTION A

Optical Biomedical Diagnostics, Monday July 5, 2010

Co-Chairmen – Prof. V. Smirnov, Prof. V. Sokolov (Russia), Prof. L. Avramov (Bulgaria)

08.30–08.40 Opening ceremony, Monday July 5, 2010

08.40–09.00 Prof. I. Shcherbakov, "The 50th anniversary of lasers"

SECTION A. Optical Biomedical Diagnostics, Monday July 5, 2010

Co-Chairmen – Prof. V. Smirnov, Prof. V. Sokolov (Russia), Prof. L. Avramov (Bulgaria).

Session A I. Chair – Prof. V. Sokolov (Russia).

09.00–09.20 paper AI.1 (invited), *"Human tissues in terms of optical biopsy"*, **L.A. Avramov**, E.G. Borisova, Tz.T. Uzunov, El.A. Petkova, Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria; Medical University, Dentistry Department, Sofia, Bulgaria; National Oncological Medical Centre, Sofia, Bulgaria.

09.20–09.40 paper AI.2, *"Fluorescence endoscopy and spectroscopy in revealing of early stage central lung cancer"*, **V.V. Sokolov**, L.V. Telegina, N.N. Bulgakova, K.A. Vereschagin, the P.A. Hertzen Moscow Research Oncology Institute, Moscow, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

09.40–10.00 paper AI.3 (invited), *"Local fluorescence spectroscopy for clinical applications"*, **N.N. Bulgakova**, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

10.00–10.20 paper AI.4, *"Optical methods for intra-operative tissue diagnostic"*, **K. Thomsen**, H. Stepp, A. Johansson, R. Baumgartner, Laser-Forschungslabor, LIFE Center, University Clinic Munich, Germany.

10.20–10.30 Discussion

10.30–10.45 Coffee break

Session A II. Chair – Prof. A. Savitsky (Russia)

10.45–11.05 paper AII.5 (invited), *"Life-time imaging of red fluorescent proteins in living cells*", **A. Savitsky**, the A.N. Bach Institute of Biochemistry of RAS.

11.05–11.25 paper AII.6 (invited), *"Fluorescence correlation spectroscopy: basics and applications"*, **J. Enderlein**, III. Institute of Physics–Biophysics, Georg-August-University, Göttingen, Germany.

11.25–11.45 paper AII.7, *"Probing molecular interactions by fluorescence lifetime imaging"*, W. Becker, **V. Shcheslavskiy**, B. Su, A. Bergmann, Becker&Hickl GmbH, Berlin, Germany.

11.45–12.05 paper AII.8, *"Characterization of red fluorescent proteins to monitor the interactions of three fluorescent proteins in living cells"*, **A. Periasamy**, Y. Sun, N. Day, the W.M. Keck Center for Cellular Imaging, Departments of Biology and Biomedical Engineering,

University of Virginia, Virginia, USA; Department of Cellular and Integrative Physiology, Indiana University School of Medicine, Indianapolis, Indiana, 46202 USA.

12.05–12.15 Discussion

12.15–13.15 Lunch

Session A III. Chair – Prof. L. Avramov (Bulgaria)

13.15–13.35 paper AIII.9 (invited), *"Teraherz radiation effects and biological applications"*, **A. Ramundo-Orlando**, Institute of Neurobiology and Molecular Medicine of National Research Council, Rome, Italy.

13.35–13.55 paper AIII.10 (invited), *"Fluorescence 3D imaging of biotissues"*, **I. Turchin**, I. Fiks, M. Kleshnin, A. Orlova, A. Savitsky, the Institute of Applied Physics of RAS, Nizhny Novgorod, Russia; A.N. Bach Institute of Biochemistry of RAS, Moscow, Russia.

13.55–14.10 paper AIII.11, "*Laser-based microcirculation imaging"*, **M. Leahy**, Dept. of Physics, University of Limerick, Ireland.

14.10–14.30 paper AIII.12, *"Two-photon total internal reflection fluorescence spectroscopy with radially polarized light",* **V. Shcheslavskiy**, D. Ivanov, I. Märki, T. Lasser, Laboratoire d'Optique Biomedicale, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland; Becker&Hickl GmbH, Berlin, Germany; Photochemistry Centre of RAS, Moscow, Russia.

14.30–14.45 paper AIII.13, *"Visualization of biological tissue hidden structures by polarized light",* **A.P. Sviridov**, V. Chernomordik, M. Hassan, A. Gandjbakhche, the Institute on Laser and Information Technologies of RAS, Troitsk, Moscow Region, Russia; Institute of Child Health and Development, National Institute of Health, Bethesda, USA.

14.45–15.00 Coffee break

Session A IV. Chair – Prof. V. Ochkin (Russia)

15.00–15.20 paper AIV.14 (invited), *"High sensitive analysis of gaseous biomarkers with tunable diode lasers and its applications for biomedical diagnostics",* **E.V. Stepanov**, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

15.20–15.40 paper AIV.15, *"Laser technique for isotopic breath test",* A.S. Boreysho, E.S. Mironchyk, I.V. Nikolaev, **V.N. Ochkin**, M.V. Spiridonov, S.N. Tskhai, D.N. Vasiliev, the P.N. Lebedev Physical Institute of RAS, Moscow, Russia; Laser Systems, St.-Petersburg, Russia.

15.40–16.00 paper AIV.16, *"Expired endogenous CO monitoring for biomedical diagnostics with tunable diode lasers",* **A.I. D'yachenko**, E.V. Stepanov, Yu.A. Shulagin, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia; Institute of Biomedical Problems of RAS, Moscow, Russia.

16.00–16.20 paper AIV.17, *"A spectroscopic sensor for real-time analysis of ammonia concentration levels in exhaled air",* **A. Kosterev**, Rice University, Houston, TX, USA.

16.20–16.40 paper AIV.18, *"Theoretical and practical aspects of laser diffractometry of red blood cells",* **S.Yu. Nikitin**, A.E. Lugovtsov, A.V. Priezzhev, Physics Department and International Laser Center, M.V. Lomonosov Moscow State University, Moscow, Russia.

16.40–16.55 paper AIV.19, *"Photon time-of-flight absorption/scattering spectrometer for biomedical and pharmaceutical applications",* **D. Khoptyar**, Lund University, Sweden.

16.55–17.10 paper AIV.20, *"Breast cancer optical diagnostic system",* S.A. Belkov, G.G. Kochemasov, **T.E. Lyubynskaya**, N.V. Maslov, A.S. Nuzhny, L.B. Da Silva, A. Rubenchik, Russian Federal Nuclear Center-VNIIEF, Sarov, Nizhny Novgorod Reg., Russia; Nuclear Safety Institute of RAS, Moscow, Russia; BioTelligent Inc., Livermore, CA, USA; LLNL, Livermore, CA, USA.

17.10–17.25 paper AIV.21, *"Informativeness and sources of errors of in vivo laser spectrophotometry methods in diagnostics of blood microcirculation disorders",* **D.A. Rogatkin**, D.S. Makarov, L.I. Dmitruk, the M.F. Vladimirskiy Moscow Regional Research and Clinical Institute (MONIKI), Moscow, Russia.

Posters AP. (Presentation at **the Joint Poster Session, 16.30–17.45, Monday, July 5**)

paper AP.1, *"Laser-induced autofluorescence in diagnosis of precancer and early stage cancer of cervix",* E.G. Novikova, O.I. Trushina, I.A. Apolikhina, E.D. Denisova, **N.N. Bulgakova**, K.A. Vereschagin, V.I. Fabelinsky, V.V. Smirnov, the P.A. Hertzen Moscow Research Oncological Institute, Moscow, Russia; I.M. Sechenov Moscow Medical Academy, Moscow, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper AP.2, *"Monitoring of the absorbed radiation dose at interstitial photodynamic therapy and hyperthermia",* **P.V. Grachev**, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper AP.3, *"Monitoring cell energy metabolism upon infection with wild-type bacteria by means of NADH fluorescence lifetime imaging microscopy",* **T. Buryakina**, Institute of Biophotonics, National Yang-Ming University, Taiwan.

paper AP.4, *"Laser-induced autofluorescence in diagnosis of pathological changes in bronchial mucosa after combined therapy of lung cancer",* **N.V. Polyakova**, N.N. Bulgakova I.A. Vasilevsky, V.A. Evtushenko, O.V. Cheremisina, Tomsk Cancer Research Institute, Tomsk, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper AP.5, *"Fluorescence techniques for the endoscopic detection of benign and malignant colonic lesions",* E.V. Filonenko, V.N. Sotnikov, A.A. Razzhivina, A.I. Perevoznikov, T.A. Savelieva, **O.A. Radvanskaya**, A.A. Sokolov, N.V. Agejkina, Department of Endoscopy of the Russian Medical Academy of Postgraduate Education, Moscow. Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper AP.6, *"Investigation of skin's fluorophores in vivo in cryoresistant or non-cryoresistant basal cell carcinoma",* **K.S. Litvinova**, V.V. Andrukhina , D.A. Rogatkin, the M.F. Vladimirskiy Moscow Regional Research and Clinical Institute (MONIKI), Moscow, Russia.

paper AP.7, *"Sapphire smart scalpel",* V. Kurlov, **I. Shikunova**, A. Ryabova, A. Alechin, Institute of Solid State Physics of RAS, Chernogolovka, Moscow Region, Russia.

paper AP.8, *"Luminescence properties of nanoparticles $Gd_{14}(BO_3)_6(GeO_4)_2O_8$ polycrystals and La–B–O glasses doped with Nd^{3+} ions for the cancer diagnostics",* **A.V. Popov**, A.V. Ryabova, V.A. Krut'ko, O.B. Petrova, V.B. Loschenov, Yu.K. Voron'ko, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia; N.S. Kurnakov General and Inorganic Chemistry of RAS, Moscow, Russia; D.I. Mendeleev University of Chemical Technology of Russia, Moscow, Russia.

paper AP.9, *"Combination of autofluoresence diagnostics with the micro-TESE for azoospermic patients",* **S.O. Yudovskiy**, M.V. Kovylina, A.V. Ryabova, Moscow State University of Medicine and Dentistry, Moscow, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper AP.10, *"Optic biomedical diagnostics of eye globe anterior section in experimental disturbed blood circulation",* V.N. Kanukov, I.I. Kagan, **D.A. Ilyukhin**, the S.N. Fyodorov MNTK, Orenburg, Russia.

paper AP.11, *"The features of measuring of biological liquid flowrate in hemodialysis machine",* K. Alekseev, I. Kiselev, V. Luginya, **D. Vasiliev**, Laser Systems, St.-Petersburg, Russia.

paper AP.12, *"Transport of biofunctional nanoparticles in viscous media using non-uniform magnetic field"*, **A.I. Omelchenko**, E.N. Sobol, the Institute on Laser and Information Technologies of RAS, Troitsk, Moscow Region, Russia.

18.00–21.00	Dinner on the river ship board

SECTION B

Clinical Laser Applications, Monday–Tuesday, July 5–6, 2010

Co-Chairmen – Prof. A. Geinitz, Prof. O. Teodorovich, Dr. D. Kochiev (Russia)

Tutorial Course

Chair – Dr. D. Kochiev (Russia).

08.30–08.40 Opening ceremony, Monday July 5, 2010

08.40–09.00 Prof. I. Shcherbakov, "The 50th anniversary of lasers"

SECTION B. Clinical Laser Applications, Monday, July 5, 2010

Co-Chairmen – Prof. A. Geinitz, Prof. O. Teodorovich, Dr. D. Kochiev (Russia).

Session B I. Chair – Prof. O. Teodorovich (Russia).

09.00–09.25 paper BI.1 (invited), *"Laser medical technologies in practical medicine in Russian Federation"*, **A. Geynits**, State Research and Clinical Center for Laser Medicine FMBA, Moscow, Russia.

09.25–09.45 paper BI.2 (invited), *"Laser lithotripsy in urology"*, **O.V. Teodorovich**, N.B. Zabrodina, G.G. Borisenko, S.A. Naryshkin, Urological Center of the Russian Railways Central Clinical Hospital No. 1, Moscow, Russia.

09.45–10.10 paper BI.3 (invited), *"New technologies of laser stomatology"*, **I. Shugailov**, RMAPO, Moscow, Russia.

10.10–10.30 paper BI.4, *"Nd:YAG laser in laparoscopic partial nephrectomy",* O.V. Teodorovich, **N.B. Zabrodina**, E.A. Galljamov, I.T. Yankovskaya, RMAPO, CKB GA, Moscow, Russia.

10.30–10.45 Coffee break

Session B II. Chair – Prof. A. Baskov (Russia)

10.45–11.05 paper BII.5 (invited), *"Laser reconstruction of discs - a novel method of degenerative disc disease treatment",* **A. Baskov**, O. Dreval, V. Baskov, E. Sobol, A. Shekhter, Russian Railways Central Clinical Hospital No. 1, Moscow, Russia.

11.05–11.25 paper BII.6, *"Findings of interventional multicanal laser decompression of the intervertebral discs in lumbar osteochondrosis",* **O. Kosareva**, V. Chudnovsky, V. Yusupov, Diagnostic Centre of Primorsky Region, Vladivostok, Russia.

11.25–11.40 paper BII.7, *"The 0.97 μm laser in the arthroscopic reconstructive treatment of knees",* **S. Ivannikov**, Diagnostic Clinical Center № 1, the I.M. Sechenov Moscow Medical Academy, Moscow, Russia.

11.40–11.55 paper BII.8, *"Experimental ground of laser punction treatment of diseases of the musculoskeletal system",* **V.M. Chudnovskiy**, Pacific Oceanology Institute FEB RAS, Vladivostok, Russia.

11.55–12.15 paper BII.9 (invited), *"Photodynamic therapy in oncology: indications, real possibilities and perspectives",* **V.V. Sokolov**, the P.A. Hertzen Moscow Research Oncological Institute, Moscow, Russia.

12.15–13.15 Lunch

Session Tutorial Course. Chair – Dr. D. Kochiev (Russia)

13.15–14.00 lecture TC1, *"Mechanisms of laser tissue interaction"*, **V. Tuchin**, the N.G. Chernyshevsky Saratov State University, Saratov, Russia.
14.00–14.45 lecture TC2, *"Laser lithotripsy"*, **O. Teodorovich**, Urological Center of the Russian Railways Central Clinical Hospital No. 1, Moscow, Russia.

14.45–15.00 Coffee break

15.00–15.45 lecture TC3, *"Photodynamic therapy and fluorescence diagnostics: apparatus and methods"*, **N. Bulgakova**, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.
15.45–16.30 lecture TC4, "*Fiber medical instrument: surgical and diagnostic applications*", **A. Pashinin,** the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

Posters BP. (Presentation at **the Joint Poster Session, 16.30–17.45, Monday, July 5**)

paper BP.1, *"Laser treatment methods of combined pathology: ureterocele and urolithiasis (case report)",* O.V. Teodorovich, G.G. Borisenko, S.A. Naryshkin, F.S. Mingbolatov, **S.Y. Dalgatov**, Urological Center of the Russian Railways Central Clinical Hospital No. 1, Moscow, Russia.
paper BP.2, *"Percutaneous laser nephrolithotripsy",* O.V. Teodorovich, G.G. Borisenko, S.A. Naryshkin, **A.S. Syrkin**, Urological Center of the Russian Railways Central Clinical Hospital No. 1, Moscow, Russia.
paper BP.3, *"Reliability and efficacy of transurethral electro resection with simultaneous ablation of the tumor bed by high-energy Nd:YAG laser in comparison with transurethral resection when treating patients with superficial bladder cancer*", O.V. Teodorovich, G.G. Borisenko, S.A Naryshkin, D.G. Kochiev, **A.A. Dudarov**, Urological Center of the Russian Railways Central Clinical Hospital No.1, Moscow, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.
paper BP.4, *"Interstitial laser coagulation of patients with prostate gland cancer"*, O.V. Teodorovich, A.A. Teplov, **A.V. Bogoslavskiy**, Y.Y. Andreeva, G.G. Borisenko, S.A. Naryshkin, D.G. Kochiev, Urological Center of the Russian Railways Central Clinical Hospital No. 1, Moscow, Russia;

P.A. Hertzen Moscow Research Oncological Institute, Moscow, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper BP.5, *"Holmium laser in transurethral ureterolithotripsy in urinary stone disease patients",* **V.N. Shirshov**, V.U. Obolonkov, O.K. Shatirishvili, I.M. Kostantinova, D.N. Doronchuk, Central Clinical Hospital № 1 JSC RZD, Moscow, Russia.

paper BP.6, *"Choose of an optimal wavelength for soft tissue dental surgery"*, A.S. Kasparov, V.P. Minaev, L.A. Semenova, **K.M. Zhilin**, FGU CNIISiChLKh, Moscow, Russia; NTO IRE-Polus, Fryazino, Russia; I.M. Sechenov Moscow Medical Academy, Moscow, Russia; National Nuclear Research University "MEPHI", Moscow, Russia.

paper BP.7, *"Photodynamic therapy in treatment of patients with multinodal not toxic craw of a thyroid gland",* R.B. Mumladze, D.D. Dolidze, **A.V. Gertzen** , T.D. Dzhigkaev, A.V. Reshetnikov, Chair of the General Surgeries, Russian Medical Academy of Postgraduate Education, Moscow, Russia.

paper BP.8. *"Efficiency of contact ureterolithotripsy by dual-wavelength laser with microsecond pulse duration"*, O.V. Teodorovich, N.B. Zabrodina, G.G. Borisenko, **O.K. Kozhin**, Chair of Endoscopic Urology, Russian Medical Academy of Postgraduate Education, Moscow, Russia; Central Clinical Hospital of Civil Aviation, Moscow, Russia.

paper BP.9. *"The comparative analysis of pneumatical and laser lithotriptors",* **A.N. Chubarov**, A.G. Chubarova, the Urology Department, Novokuibyshevsk Central City Hospital.

paper BP.10. "*The experimental rationale for the use of laser effect in the presence of photosensitizer in malignant lymphoma",* **A. Alehin**, T. Sergeeva, E. Kiseleva, A. Vasiliev, Central Clinic Hospital of RAS, Moscow, Russia; Koltzov Institute of Developmental Biology of RAS, Moscow, Russia.

18.00–21.00	Dinner on the river ship board

SECTION B. Clinical Laser Applications, Tuesday, July 6, 2010

Co-Chairmen – Prof. A. Geinitz, Prof. O. Teodorovich, Dr. D. Kochiev (Russia).

Session B III. **July 6, Tuesday**. Chair – Dr. S. Naryshkin (Russia).

09.00–09.20 paper BIII.10 (invited), *"Near infrared laser coagulation: method of choice in treatment of complicated hemangiomas in children",* **I. Abushkin**, V. Privalov, A. Lappa, Medical Physics Center at Chelyabinsk State Medical Academy and Chelyabinsk State University, Chelyabinsk, Russia.

09.20–09.35 paper BIII.11, *"Lasers in otorinolaringology",* **A. Nasedkin**, V. Svistushkin, N. Grachev, the I.M. Sechenov Moscow Medical Academy, Moscow, Russia.

09.35–09.50 paper BIII.12, *"Intraluminal endoscopical laser surgery at the early stage larynx, trachea and bronchous cancer",* **V. Sokolov,** A. Trahtenberg, O. Pikin, L. Telegina, A. Gladyshev, G. Frank, V. Chissov, the P.A. Hertzen Moscow Research Oncological Institute, Moscow, Russia.

09.50–10.05 paper BIII.13, *"Modern possibilities of high and low-energy lasers in otorhinolaryngology",* **A.S. Lapchenko**, A.G. Kucherov, Russian State Medical University, Moscow, Russia.

10.05–10.20 paper BIII.14, *"Surgical lasers in the treatment of chronic rhinitis"*, **N.S. Grachev,** the M.F. Vladimirskiy Moscow Regional Research and Clinical Institute (MONIKI), Clinic of Otorhinolaringology, Moscow, Russia.

10.20–10.35 paper BIII.15, *"Lasers in the treatment of BPH: past, present and future"*, **R. Mushter**, Academic Teaching Hospital, Rotenburg, Germany.

10.30–10.45 Coffee break

Session B IV. Chair – Prof. G. Altshuler (USA)

11.30–11.45 paper BIV.16 (invited), *"Fractional microphotothermolysis: new concept of skin rejuvenation"*, **G. Altshuler**, Palomar Medical Technologies, Inc., Burlington, USA.

11.00–11.15 paper BIV.17, "*Holmium laser in treatment of upper urinary tract diseases",* **A.A. Nemenova**, S.S. Zenkov, K.A. Berestennikov, The First City Clinical Hospital, Moscow, Russia.

11.15–11.30 paper BIV.18, *"Laser technologies - new possibilities for treating pathologies in the uterine cervix",* A.V. Geynits, M.I. Kovalev, **E.V. Rokhlina**, State Research and Clinical Center for Laser Medicine, Ministry of Public Health and Social Maintenance of Russian Federation FMBA, Moscow, Russia; I.M. Sechenov Moscow Medical Academy, Moscow, Russia.

10.45–11.00 paper BIV.19, *"Laser lithotripsy in the urolithiasis treatment"*, **N. Simchenko**, A. Pranovich, Mogilev Regional Hospital, Belarus.

11.45–12.00 paper BIV.20, *"Photodynamic therapy of human papilloma virus associated diseases of female genital organs",* **I.A. Apolikhina**, E.D. Denisova, T.A. Teterina, N.N. Bulgakova, the I.M. Sechenov Moscow Medical Academy, Moscow, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

12.00–12.15 paper BIV.21, *"Comparison of the laser radiation 1.47–1.56 μm and 0.915–0.98 μm clinical application for endovenous obliteration",* **A. Sokolov**, K. Lyadov, M. Lutsenko, V. Minaev, Center of Treatment and Rehabilitation of the RF Health Ministry, Moscow, Russia.

12.20–13.30 Lunch

Session B V. Chair – Prof. E. Stepanov (Russia)

13.30–13.45 paper BV.22, *"Clinical applications of H. pylori infection diagnostics with tunable diode lasers",* A.V. Lapshin, E.K. Baranskaya, V.T. Ivashkin, **E.V. Stepanov**, P.V. Zyrianov, V.A. Miliaev, S.G. Kasoev, the V.H. Vasilenko Clinic of Internal Diseases Propedeutics, Gastroenterology and Hepatology, the I.M. Sechenov Moscow Medical Academy, Moscow, Russia; the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

13.45–14.00 paper BV.23, *"Tumor necrobiosis study in photodynamic therapy with a chlorine type photosensitizer on transplanted Ehrlich's adenocarcinoma in mice",* **V.A. Privalov**, A.V. Lappa, E.L. Kurenkov, E.N. Bigbov, Medical Physics Center at Chelyabinsk State Medical Academy and Chelyabinsk State University, Chelyabinsk, Russia.

14.00–14.15 paper BV.24, *"Laser technologies, PDT and biologically active bandages for wound Treatment",* **P. Tolstykh**, State Research and Clinical Center for Laser Medicine FMBA, Moscow, Russia.

14.15–14.30 paper BV.25, "*Laseroantibioticotherapy the sharp cystitis at women",* A.A. Belopolskij (Jr.), **A.V. Gertsen,** T.A. Vasina, A.A. Belopolskij, Peoples' Friendship University of Russia, RMAPO, Moscow, Russia.

14.30–14.45 paper BV.26, *"Photodynamic therapy of different genesis wounds",* **P. Tolstykh**, A.Solov'eva, A. Ivanov, the State Research and Clinical Center for Laser Medicine FMBA, Moscow, Russia.

14.45–15.00 paper BV.27, "*Laser-assisted dacryocystorhinostomy",* E. Atkova, V. Beloglazov, G. Abdurakchmanov, **E. Yusipova**, the Scientific Research Institute of Eye Diseases, Moscow, Russia.

15.00–15.20 Coffee break

Session B VI. Chair – Dr. D. Kochiev (Russia)

15.20–15.40 paper BVI.28, *"Application of laser scalpel with wavelength 1.9 μm in dental practice (first results)"*, A.S. Kasparov, D.V. Simonyan, V.P. Minaev, **K.M. Zhilin**, FGU CNIISiChLKh, Moscow, Russia, NTO IRE-Polus, Fryazino, Russia, National Nuclear Research University "MEPHI", Moscow, Russia.

15.40–16.00 paper BVI.29, *"The different types of fractional lasers in 2010",* **S. Volodine**, G. van Gyseghem, Biolaser Technologies et Finances S.A., Luxembourg.

16.00–16.15 paper BVI.30, *"Experience of laser application on base of urology department № 1 of road clinical hospital at St. Rostov – glavnyi of OJSC "RZhD"*, **N.V. Budnik**, I.M. Spitsyn, OAO RZD DKB, Rostov-on-Don, Russia.

16.15–16.30 paper BVI.31, *"The experience with the laser surgical complex "Lazurite" in patients with urinary stone disease",* **A.I. Bajchuk**, G.G. Yakimovich, A.I. Voitekhovich, G.V. Yutsevich, O.S. Lukin, Yu.V. Mosko, Public Health Services Establishment, Grodno Regional Clinical Hospital, Grodno, Belarus.

16.30–16.45 paper BVI.32, *"Intravenous laser blood irradiation in postoperative period – dynamics of coagulology parameters"*, **A.M. Khosrovjan**, L.V. Musikhin, V.S. Shirjaev, N.L. Molotova, P.V. Smolnikov, State Research and Clinical Center for Laser Medicine, Ministry of Public Health and Social Maintenance of Russian Federation FMBA, Moscow, Russia.

16.55–17.10 Closing

SECTION C

Laser–Tissue Interaction, Monday July 5, 2010

Co-Chairmen – Prof. V. Loshchenov (Russia), Prof. R. Steiner (Germany)

08.30–08.40 Opening ceremony, Monday July 5, 2010

08.40–09.00 Prof. I. Shcherbakov, "The 50th anniversary of lasers"

SECTION C. Laser–Tissue Interaction, Monday July 5, 2010

Co-Chairmen – Prof. V. Loshchenov (Russia), Prof. R. Steiner (Germany)

Session C I. Chair – Prof. R. Steiner (Germany)

09.00–09.25 paper CI.1 (invited), "*IR-lasers for medical applications",* **R. Steiner**, Institut fuer Lasertechnologien in der Medizin und Messtechnik an der Universitaet Ulm, Ulm, Germany.

09.25–09.45 paper CI.2, *"Destructive action of femtosecond laser pulses onto retina",* **G.I. Zheltov**, I.L. Katsev, O.G. Romanov, G.S. Romanov, Institute of Physics, National Academy of Sciences, Minsk, Belarus; Belarusian State University, Minsk, Belarus; Heat- and Mass-Transfer Institute, Minsk, Belarus.

09.45–10.05 paper CI.3 (invited), *"Optical feedback and real time monitoring for laser surgery",* **A. Douplik**, Friedrich-Alexander Universität Erlangen-Nürnberg, Germany.

10.05–10.20 paper CI.4, *"Interaction of CO_2 laser with Skin: the analytical investigation of photothermal effect",* **P. Elahi**, M. Jahanbekam, Department of Physics, College of Science, Shiraz University of Technology, Shiraz, Iran; Department of Physics, Payame Noor University, Shiraz, Iran.

10.20–10.30 paper CI.5, *"About interactions differences on biological tissue between hemoglobin-absorbed and water-absorbed lasers",* V.P. Minaev**, K.M. Zhilin,** NTO IRE-POLUS, Fryazino, Russia; National Nuclear Research University "MEPHI", Moscow, Russia.

10.30–10.45 Coffee break

Session C II. Chair – Prof. Y. Kulchin (Russia).

10.45–11.10 paper CII.6 (invited), *"Laser and LED phototherapy mediated by nanoparticles",* **V. Tuchin**, Saratov State University, Saratov, Russia.

11.10–11.35 paper CII.7 (invited), *"Nanophotosensitizers for optical diagnostics and phototherapy",* **V. Loshchenov**, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

11.35–11.55 paper CII.8, *"Extinction, scattering, and depolarization of light by gold and bimetallic nanorods: towards biomedical imaging",* **B.N. Khlebtsov**, E. Panfilova, N.G. Khlebtsov,

Institute of Biochemistry and Physiology of Plants and Microorganisms, Saratov, Russia; Saratov State University, Saratov, Russia.

11.55–12.15 paper CII.9 (invited), *"Relaxation of velocity of nonequilibrium nanoparticles in a liquid",* **Yu.N. Kulchin**, O.B. Vitrik, N.P. Kraeva, the Institute of Automation and Control Processes of FEB RAS, Vladivostok, Russia.

12.15–13.15	Lunch

Session C III. Chair – Prof. V. Tuchin (Russia)

13.15–13.40 paper CIII.10 (invited), *"PDT therapy planning for solid tumours",* **Lothar Lilge,** University Health Network and University of Toronto, Canada.

13.40–14.05 paper CIII.11, *"Ways of delivering light for treating cancer of the major duodenal papilla and extrahepartic bile ducts with photodynamic therapy",* **E.F. Stranadko**, A.I. Lobakov, V.A. Morokhotov, State Research and Clinical Center for Laser Medicine Ministry of Public Health and Social Maintenance of the Russian Federation FMBA, Moscow, Russia; M.F. Vladimirsky Moscow Regional Research and Clinical Institute, Moscow, Russia.

14.05–14.25 paper CIII.12, *"Technique for accelerating soft tissue defect healing after photodynamic therapy in patients with oral cavity cancer",* **M.V. Rjabov,** E.F. Stranadko, V.A. Titova, E.Yu. Lubimova, State Research and Clinical Center for Laser Medicine Ministry of Public Health and Social Maintenance of the Russian Federation FMBA, Moscow, Russia; Firm «MNPK Biotechindustria», Moscow, Russia; Russian Research Center of Roentgenoradiology, Rosmedtechnologia, Moscow, Russia.

14.25–14.45 paper CIII.13, "*Photodynamic therapy and fluorescent diagnostics: technique and outlook",* **K.G. Linkov,** the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia

14.45–15.00	Coffee break

Session C IV. Chair – Prof. A. Douplik (Germany)

15.00–15.15 paper CIV.14, *"New photosensitisers for PDT based on nanostructural forms of chlorine E, bacteriochlorine P and phthalocyanine derivatives",* **G.A. Meerovich**, I.G. Meerovich, V.I. Pozdeev, M.A. Gren, A.P. Polozkova, O.L. Orlova, A.G. Cyprovsky, N.A. Oborotova, A.F. Mironov, A.Yu. Baryshnikov, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

15.15–15.30 paper CIV.15, *"Luminescent Si nanoparticles for biology and medicine",* V. Pustovoy, S. Korovin, **A. Vladimirov**, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

15.30–15.45 paper CIV.16, *"5-ALA fluorescence diagnosis in neurosurgery ",* A.A. Potapov, D.Yu. Usachev, V.A. Loshakov, G.L. Kobiakov, V.N. Kornienko, I.N. Pronin, A.G. Gavrilov, L.V. Shishkina, A.N. Shkarubo, D.A. Golbin, **P.V. Zelenkov**, V.A. Shurkhai, P. Grachev, T. Savelieva, the N.N. Burdenko Neurosurgery Institute, Moscow, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

15.45–16.00 paper CIV.17, *"Development of a light diffusion investigation method in thin layers of biological tissues",* **N.A. Kalyagina**, V.B. Loschenov, C. Daul, D. Wolf, W. Blondel, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia; Centre de Recherche en Automatique de Nancy, Nancy Université, Vandœuve-Les-Nancy, France.

16.00–16.15 paper CIV.18, *"Photodynamic therapy of vulvar lichen sclerosus and squamous hyperplasia with 5-aminolevulinic acid"*, **E.A. Tchoulkova**, I.O. Makarov, O.V. Tchoulkova, the I.M. Sechenov Moscow Medical Academy, Obstetrics and Gynaecology, Moscow, Russia; P.A. Hertzen Moscow Research Oncological Institute, Moscow, Russia.

16.15–16.30 paper CIV.19, *"Endoscopic photodynamic therapy with E6 chlorine in advanced stage lung cancer: preliminary results"*, A. Akopov, V. Molodtsova, A. Rusanov, N. Kazakov, I. Chistiakov, Research Institute of Pulmonology, Pavlov Medical University, St.-Petersburg, Russia

Posters C P. **(**Presentation at **the Joint Poster Session, 16.30–17.45, Monday, July 5**)

paper CP.1, *"Application of the aluminum phthalocyanine nanophotosensitizer for evaluation of skin autotransplants engraftment quality",* **S.Yu. Vasilchenko,** A.I. Volkova, A.V. Ryabova, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper CP.2, *"High energy pulse laser in urology: thermal modeling of tissue interaction",* Parviz Elahi, **Leila Khalafi**, Department of Physics, College of Science, Shiraz University of Technology, Shiraz, Iran; Department of Physics, Payame Noor University, Shiraz, Iran.

paper CP.3, *"Fiber optic systems of laser light delivery to different neoplasm localizations",* **V.V. Volkov**, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper CP.4, *"LED and pulsed light system for fluorescent diagnostics and photodynamic therapy",* **N.N. Brysin**, T.A. Savelieva, K.G. Linkov, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper CP.5, *"Monitoring of oxygen saturation superficial distribution during photodynamic therapy",* **T.A. Savelieva**, M.V. Loschenov, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper CP.6, *"The use of intense pulsed light for photodynamic therapy of skin diseases",* **M.S. Ivanova**, S.N. Akhtyamov, Yu.S. Butov, S.Yu. Vasilchenko, A.I. Volkova, S.G. Kuzmin, the Russian State Medical University, Moscow, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia; SRC "NIOPIK", Moscow, Russia.

paper CP.7, *"Colonic lesions fluorescence diagnostics with Alasens",* E.V.Filonenko, V.N. Sotnikov, A.A. Razzhivina, A.I. Perevoznikov, A.A. Sokolov, O.A. Radwanskaya, N.V. Ageykina, D.Y. Esenin, T.A. Savelieva, Department of Endoscopy of the Russian Medical Academy of Postgraduate Education, Moscow, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow. Russia.

paper CP.8, *"Method for determining a depth of brain tissue by optical probing",* **M. Kholodtzova**, P. Grachev, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

18.00–21.00	Dinner on the river ship board

SECTION D

Advanced Laser Systems for Medicine, Tuesday July 6, 2010

Co-Chairmen – Prof. S. Vartapetov (Russia), Prof. K. Petermann (Germany).

SECTION D. Advanced Laser Systems for Medicine, Tuesday July 6, 2010

Co-Chairmen – Prof. S. Vartapetov (Russia), Prof. K. Petermann (Germany).

Session D I. Chair – Prof. N. Pashtaev

09.00–09.20 paper DI.1 (invited), *"Doctor's suggestions for new designs of excimer laser for better effect in visual quality after procedure"*, **Wang Qinmei**, the Eye Hospital of Wenzhou Medical College, Wenzhou, China.

09.20–09.40 paper DI.2 (invited), *"The role of femtosecond laser in corneal surgery. History and development"*, **Imola Ratkay-Traub**, Aura Clinic & FemtoVision, Budapest, Hungary.

09.40–09.55 paper DI.3 (invited) *"ReLEx. All-femtolaser vision correction innovative technique: 3 months result"*, **I. Solomatin**, MD, J. Gertnere, the Dr. Solomatin Eye Center, Riga, Latvia.

09.55–10.10 paper DI.4 (invited), *"The role of the lasers in aesthetic plastic surgery"*, **Alfred Traub**, Aura Clinic & FemtoVision, Budapest, Hungary.

10.10–10.25 paper DI.5 (invited), *"Excimer laser uses in ophthalmology*", **Santiago Mejia**, the Visual Laser-Clinica de Medellin, Medellin, Colombia.

10.30–10.45	Coffee break

Session D II. Chair – Prof. I. Solomatin (Latvia)

10.45–11.05 paper DII.6, (invited),*" Femtosecond intrastromal ring implantation for patiens with keratoconus",* **N.P. Pashtaev**, N.A. Maslova, Cheboksary Branch of the S.N. Fyodorov Federal "Eye Microsurgery Complex", Cheboksary, Russia.

11.05–11.25 paper DII.7, *"Combined application of femtosecond laser and customized ablation as a novel medical approach to surgical correction of refractive errors in patients with previous radial keratotomy",* V. Trubilin, **M. Pozharitskiy**, FMBA (Federal Medical Biological Agency), Moscow, Russia.

11.25–11.40 paper DII.8, *"The sub-Bowmen femto-keratomileusis (SBFK) & tissue saving excimer laser ablation (TSELA) in high myopia correction*", A.V. Doga, G.F. Kachalina, Yu.I. Kishkin, **N.V. Maychuk**, the S.N. Fyodorov Federal "Eye Microsurgery Complex", Moscow, Russia.

11.40–11.55 paper DII.9, *"Femtosecond laser and mechanical microkeratome: corneal hystomorphology in vivo after flap formation",* G.F. Kachalina, N.V. Maychuk, **O.I. Kondakova**, the S.N. Fyodorov Federal "Eye Microsurgery Complex", Moscow, Russia.

11.55–12.10 paper DII.10, "*The IntraLase femtosecond laser in corneal keratoplasty: the new age"*, **L. Buzzonetti**, Bambibo Gesù Children's Hospital, Rome, Italy.

12.20–13.30 Lunch

Session D III. Chair – Prof. M. Pozharitskiy (Russia)

13.30–13.45 paper DIII.11, *"The necessity to develop equipment for the treatment of tumors with vascular component",* **A.I. Nerobeyev**, M.N. Bolshakov, S.N. Golubeva, Central Research Institute of Stomatology and Maxillo-Facial Surgery, Moscow, Russia.

13.45–14.00 paper DIII.12, *"Effect of nondestructive laser irradiation on the hydro-permeability of eye trabecula",* **O.I. Baum**, A.V. Bolshunov, A.E. Ivanov, M.V. Monahova, A.I. Omelchenko, E.N. Sobol, Institute on Laser and Information Technologies of RAS, Troitsk, Moscow Region, Russia; Institute of Eye Diseases of RAMN, Moscow, Russia; M.V. Lomonosov Moscow State University, Chemical Department, Moscow, Russia.

14.00–14.15 paper DIII.13, *"Specific character of PRK performed by wide aperture laser "profile"*, **A.I. Myagkikh**, E.A. Subbotin, E.V. Makurin, "Ost-Optik K" Co., Ltd., Vladivostok, Russia.

14.15–14.30 paper DIII.14, *"Applications of adaptive optics in ophthalmology",* **A.V. Larichev,** N.G. Iroshnikov, I.P. Nikolaev, V.Ya. Panchenko, the M.V.Lomonosov Moscow State University, Faculty of Physics, Moscow, Russia; Institute on Laser and Information Technologies of RAS, Shatura, Russia.

14.30–14.45 paper DIII.15, *"New technique of rehabilitation of visual function based on selective influence of short laser pulses on retinal pigment epithelium*", K.P. Takhchidi, G.F. Kachalina, G.I. Zheltov, **E.V. Ivanova**, the S.N. Fyodorov Federal "Eye Microsurgery Complex", Moscow, Russia; B.I. Stepanov Institute of Physics, Minsk, Belarus.

15.00–15.20 Coffee break

Session D IV. Chair – Prof. K. Petermann (Germany)

15.20–15.40 paper DIV.16 (invited), *"High power Yb- and Tm-doped sesquioxide lasers",* R. Peters, P. Koopmann, **K. Petermann**, G. Huber, Institute of Laser Physics, University of Hamburg, Hamburg, Germany.

15.40–16.00 paper DIV.17 (invited), *"Instruments for surgery and force therapy with fiber lasers",* **V.P. Minaev**, NTO IRE-Polus, Fryazino, Moscow Region, Russia.

16.00–16.20 paper DIV.18, *"DNA-based biosensor analytical systems for medicine",* Yu. Evdokimov, **O. Kompanets**, Institute for Spectroscopy of RAS, Troitsk, Moscow Region, Russia; V.A. Engelhardt Institute of Molecular Biology of RAS, Moscow, Russia.

16.20–16.35 paper DIV.19, *"Raman fiber laser for the drug-free photodynamic therapy",* **A.S. Kurkov**, A.S. Yusupov, S.E. Goncharov, I.D. Zalevskii, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia; Laser and Health Ltd., Ufa, Russia; Milon Laser, St.-Petersburg, Russia.

16.35–16.50 paper DIV.20, *"Widely tunable linear laser for optical coherence tomography with titled Fabry–Perot interferometer with inverted resonances as feedback",* **A.A. Moiseev**, G.V. Gelikonov, E.A. Mashcovitch, V.M. Gelikonov, the Institute of Applied Physics of RAS, Nizhny Novgorod, Russia; University of Nizhny Novgorod, Nizhny Novgorod, Russia.

17.05–17.20 Closing

Posters D P. (Presentation at **the Joint Poster Session, 16.30–17.45, Monday, July 5**)

paper DP.1, *"Two-photon total internal reflection fluorescence spectroscopy with radially polarized light",* V. Shcheslavskiy, **D. Ivanov**, I. Märki, T. Lasser, Becker&Hickl GmbH, Berlin, Germany; Laboratoire d´Optique Biomedicale, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland.

paper DP.2, *"Eximer laser for dermatology",* **T.V. Malinsky**, V.V. Atejev, S.K. Vartapetov, A.Z. Obidin, Physics Instrumentation Center, A.M. Prokhorov General Physics Institute of RAS (PIC GPI RAS).

paper DP.3, *"Influence of different cases of ametropia on retinal and clinical visual acuity",* **A.V. Rudakova**, N.G. Iroshnikov, A.V. Larichev, V.Ya. Panchenko, the M.V. Lomonosov Moscow State University, Faculty of Physics, Moscow, Russia; Institute on Laser and Information Technologies of RAS, Shatura, Russia.

paper DP.4, *"Laser apparatus of Alcom Medica for medical application",* **A. Vitkov**, Alcom Medica Ltd., St. Petersburg, Russia.

paper DP.5, *"New laser technology for treatment of vascular, pigmented and non-pigmented lesions on the base of yellow laser (578 nm)",* **I.V. Ponomarev**, S.V. Klyucharyova, the P.N. Lebedev Physics Institute, Moscow, Russia; Department of Dermatology, Venereology and Pathological Anatomy of the I.I. Mechnikov St. Petersburg State Medical Academy, St. Petersburg, Russia.

paper DP.6, *"Laser lancet with glucose meter",* **E. Savchuk**, V. Polushkin, New Technology Engineering Center, Troitsk, Moscow Region, Russia.

paper DP.7, *"Optic biomedical diagnostics of eye globe anterior section in experimental disturbed blood circulation",* V.N. Kanukov, I.I. Kagan, D.A. Ilyukhin, Orenburg Branch of S.N. Fyodorov Federal «Eye Microsurgery Complex», Orenburg, Russia.

paper DP.8, *"Initial experience of Pascal treatment for active retinopathy of prematurity",* A.V. Tereshchenko, Yu.A. Belyy, P.L. Volodin, I.G. Trifanenkova, M.S. Tereshchenkova, Kaluga Branch of S.N. Fyodorov Federal «Eye Microsurgery Complex», Kaluga, Russia.

paper DP.9, *"Femtosecond laser for ophthalmology",* V. Atejev, **K. Lapshin**, A. Obidin, S. Vartapetov, Physics Instrumentation Center of GPI RAS, Troitsk, Moscow Region, Russia; Optosystems Ltd., Troitsk, Moscow Region, Russia.

paper DP.10, *"Fluorescence diagnostics in ophthalmology with chlorine E6 fluorescence marker",* Yu.A. Belyy, A.V. Tereshchenko, **P.L. Volodin**, Kaluga Branch of S.N. Fyodorov Federal "Eye Microsurgery Complex", Kaluga, Russia.

paper DP.11, *"Optoelectronic apparatuses for sports",* **V.I. Karandashov**, V.A. Tjykov, State Research and Clinical Center for Laser Medicine, Ministry of Public Health and Social Maintenance of Russian Federation FMBA, Moscow, Russia; Firm «POISK TP» Moscow, Russia.

paper DP.12, *"Diode-pumped Tm:YLF and laser-pumped Ho:YAG lasers for medical surgery",* O.L. Antipov, N.G. Zakharov, V.V. Sharkov, N.M Shakhova, R. Stroka, M. Fedorov, Institute of Applied Physics of RAS, Nizhniy Novgorod, Russia; Laser-Forschugslabor Klinikum der Universität München, Germany

Joint Poster Session, 16.30–17.45, Monday, July 5

Chair – Dr. N. Bulgakova

Joint Poster Session, 16.30–17.45, Monday, July 5

Chair – Dr. N. Bulgakova

paper AP.1, *"Laser-induced autofluorescence in diagnosis of precancer and early stage cancer of cervix",* E.G. Novikova, O.I. Trushina, I.A. Apolikhina, E.D. Denisova, **N.N. Bulgakova**, K.A. Vereschagin, V.I. Fabelinsky, V.V. Smirnov, the P.A. Hertzen Moscow Research Oncological Institute, Moscow, Russia; I.M. Sechenov Moscow Medical Academy, Moscow, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper AP.2, *"Monitoring of the absorbed radiation dose at interstitial photodynamic therapy and hyperthermia",* **P.V. Grachev**, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper AP.3, *"Monitoring cell energy metabolism upon infection with wild-type bacteria by means of NADH fluorescence lifetime imaging microscopy",* **T. Buryakina**, Institute of Biophotonics, National Yang-Ming University, Taiwan.

paper AP.4, *"Laser-induced autofluorescence in diagnosis of pathological changes in bronchial mucosa after combined therapy of lung cancer",* **N.V. Polyakova**, N.N. Bulgakova I.A. Vasilevsky, V.A. Evtushenko, O.V. Cheremisina, Tomsk Cancer Research Institute, Tomsk, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper AP.5, *"Fluorescence techniques for the endoscopic detection of benign and malignant colonic lesions",* E.V. Filonenko, V.N. Sotnikov, A.A. Razzhivina, A.I. Perevoznikov, T.A. Savelieva, **O.A. Radvanskaya**, A.A. Sokolov, N.V. Agejkina, Department of Endoscopy of the Russian Medical Academy of Postgraduate Education, Moscow. Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper AP.6, *"Investigation of skin's fluorophores in vivo in cryoresistant or non-cryoresistant basal cell carcinoma",* **K.S. Litvinova**, V.V. Andrukhina , D.A. Rogatkin, the M.F. Vladimirskiy Moscow Regional Research and Clinical Institute (MONIKI), Moscow, Russia.

paper AP.7, *"Sapphire smart scalpel",* V. Kurlov**, I. Shikunova**, A. Ryabova, A. Alechin, Institute of Solid State Physics of RAS, Chernogolovka, Moscow Region, Russia.

paper AP.8, *"Luminescence properties of nanoparticles $Gd_{14}(BO_3)_6(GeO_4)_2O_8$ polycrystals and La–B–O glasses doped with Nd^{3+} ions for the cancer diagnostics",* **A.V. Popov**, A.V. Ryabova, V.A. Krut'ko, O.B. Petrova, V.B. Loschenov, Yu.K. Voron'ko, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia; N.S. Kurnakov General and Inorganic Chemistry of RAS, Moscow, Russia; D.I. Mendeleev University of Chemical Technology of Russia, Moscow, Russia.

paper AP.9, *"Combination of autofluoresence diagnostics with the micro-TESE for azoospermic patients",* **S.O. Yudovskiy**, M.V. Kovylina, A.V. Ryabova, Moscow State University of Medicine and Dentistry, Moscow, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper AP.10, *"Optic biomedical diagnostics of eye globe anterior section in experimental disturbed blood circulation",* V.N. Kanukov, I.I. Kagan, **D.A. Ilyukhin**, the S.N. Fyodorov MNTK, Orenburg, Russia.

paper AP.11, *"The features of measuring of biological liquid flowrate in hemodialysis machine",* K. Alekseev, I. Kiselev, V. Luginya, **D. Vasiliev**, Laser Systems, St.-Petersburg, Russia.

paper AP.12, *"Transport of biofunctional nanoparticles in viscous media using non-uniform magnetic field"*, **A.I. Omelchenko**, E.N. Sobol, the Institute on Laser and Information Technologies of RAS, Troitsk, Moscow Region, Russia.

paper BP.1, *"Laser treatment methods of combined pathology: ureterocele and urolithiasis (case report)",* O.V. Teodorovich, G.G. Borisenko, S.A. Naryshkin, F.S. Mingbolatov, **S.Y. Dalgatov**, Urological Center of the Russian Railways Central Clinical Hospital No. 1, Moscow, Russia.

paper BP.2, *"Percutaneous laser nephrolithotripsy",* O.V. Teodorovich, G.G. Borisenko, S.A. Naryshkin, **A.S. Syrkin**, Urological Center of the Russian Railways Central Clinical Hospital No. 1, Moscow, Russia.

paper BP.3, *"Reliability and efficacy of transurethral electro resection with simultaneous ablation of the tumor bed by high-energy Nd:YAG laser in comparison with transurethral resection when treating patients with superficial bladder cancer*", O.V. Teodorovich, G.G. Borisenko, S.A Naryshkin, D.G. Kochiev, **A.A. Dudarov**, Urological Center of the Russian Railways Central Clinical Hospital No. 1, Moscow, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper BP.4, *"Interstitial laser coagulation of patients with prostate gland cancer"*, O.V. Teodorovich, A.A. Teplov, **A.V. Bogoslavskiy**, Y.Y. Andreeva, G.G. Borisenko, S.A. Naryshkin, D.G. Kochiev, Urological Center of the Russian Railways Central Clinical Hospital No. 1, Moscow, Russia; P.A. Hertzen Moscow Research Oncological Institute, Moscow, Russia; A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper BP.5, *"Holmium laser in transurethral ureterolithotripsy in urinary stone disease patients",* **V.N. Shirshov**, V.U. Obolonkov, O.K. Shatirishvili, I.M. Kostantinova, D.N. Doronchuk, Central Clinical Hospital № 1 JSC RZD, Moscow, Russia.

paper BP.6, *"Choose of an optimal wavelength for soft tissue dental surgery"*, A.S. Kasparov, V.P. Minaev, L.A. Semenova, **K.M. Zhilin**, FGU CNIISiChLKh, Moscow, Russia; NTO IRE-

Polus, Fryazino, Russia; I.M. Sechenov Moscow Medical Academy, Moscow, Russia; National Nuclear Research University "MEPHI", Moscow, Russia.

paper BP.7, *"Photodynamic therapy in treatment of patients with multinodal not toxic craw of a thyroid gland",* R.B. Mumladze, D.D. Dolidze, **A.V. Gertzen** , T.D. Dzhigkaev, A.V. Reshetnikov, Chair of the General Surgeries, Russian Medical Academy of Postgraduate Education, Moscow, Russia.

paper BP.8, *"Efficiency of contact ureterolithotripsy by dual-wavelength laser with microsecond pulse duration"*, O.V. Teodorovich, N.B. Zabrodina, G.G. Borisenko, **O.K. Kozhin**, Chair of Endoscopic Urology, Russian Medical Academy of Postgraduate Education, Moscow, Russia; Central Clinical Hospital of Civil Aviation, Moscow, Russia.

paper BP.9, *"The comparative analysis of pneumatical and laser lithotriptors",* **A.N. Chubarov**, A.G. Chubarova, the Urology Department, Novokuibyshevsk Central City Hospital.

paper BP.10, "*The experimental rationale for the use of laser effect in the presence of photosensitizer in malignant lymphoma",* **A. Alehin**, T. Sergeeva, E. Kiseleva, A. Vasiliev, Central Clinic Hospital of RAS, Moscow, Russia; Koltzov Institute of Developmental Biology of RAS, Moscow, Russia.

paper CP.1, *"Application of the aluminum phthalocyanine nanophotosensitizer for evaluation of skin autotransplants engraftment quality",* **S.Yu. Vasilchenko,** A.I. Volkova, A.V. Ryabova, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

paper CP.2, *"High energy pulse laser in urology: thermal modeling of tissue interaction",* Parviz Elahi, **Leila Khalafi**, Department of Physics, College of Science, Shiraz University of Technology, Shiraz, Iran; Department of Physics, Payame Noor University, Shiraz, Iran.

paper CP.3, *"Fiber optic systems of laser light delivery to different neoplasm localizations",* **V.V. Volkov**, the A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

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