

## ILLA/LTL '2009 Program

Sunday, October 18, 2009

### Arrival, Registration, Sightseeing Program

Monday, October 19, 2009

<b>9.0.11.30</b>	<b>Registration</b>
<b>13.00-15.00</b>	<b>Lunch</b>
<b>15.00-17.00</b>	<b>Opening Ceremony</b>
<b>19.30</b>	<b>Welcome Party</b>

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Tuesday, October 20, 2009

### **Hall A: Session ILT ALT1: Industrial Laser Technologies, Advanced Laser Technologies for Material Processing**

<b>9.00-9.20</b>	<b>ADVANCES IN SLS/SLM AND SLC TECHNOLOGIES (INVITED)</b> <i>Yu. Chivel</i> <i>Institute of Physics, Belarus</i>
<b>9.20-9.35</b>	<b>TECHNOLOGIES AND PHYSICAL MECHANISMS OF LASER 3D SYNTHESIS OF METALLIC POWDER MATERIALS (ORAL)</b> <i>V.Ya. Panchenko, V.S. Golubev, V.V. Vasiltsov, M.G. Galushkin, I.N. Ilyichev</i> <i>Institute on Laser and Information Technologies, RAS, Russia</i>
<b>9.35-9.55</b>	<b>CONTACT LASER ULTRASONIC EVALUATION FOR QUANTITATIVE CHARACTERIZATION OF MATERIAL STRUCTURE (INVITED)</b> <i>A.A. Karabutov<sup>1</sup>, E.V. Savateeva<sup>2</sup>, A.N. Zharinov<sup>3</sup>, A.A. Karabutov Jr.<sup>3</sup></i> <i><sup>1</sup>M.V. Lomonosov Moscow State University International Laser Center, Russia</i> <i><sup>2</sup>Institute on Laser and Information Technologies, Russian Academy of Science, Russia</i> <i><sup>3</sup>M.V. Lomonosov Moscow State University Physical Department, Russia</i>
<b>9.55-10.15</b>	<b>USING LASERS FOR NANOMANIPULATION WITH COLLABORATIVE TOOLS FOR EFFICIENT ASSEMBLY IN A BOTTOM-UP APPROACH (INVITED)</b> <i>Suat Topcu</i> <i>LIRIS / LISV- University of Versailles (I'UVSQ), France</i>
<b>10.15-10.35</b>	<b>NANO- AND MICROSCALE STRUCTURES INDUCED BY CONTROLLED LASER HEATING OF THE CARBON MATERIAL SURFACE (INVITED)</b> <i>S.M. Arakelian, S.V. Kutrovskaia, A.O. Kucherik, V.G. Prokoshev</i> <i>Vladimir State University, Russia</i>

Tuesday, October 20, 2009

**Hall B:                    Session ULP SA 1:  
Ultrashort Laser Pulses – Science and Applications**

- 9.00-9.20                    INTERACTION POWERFUL PICOSECOND 10- $\mu$ M LASER RADIATION WITH GASEOUS MEDIA: PULSE DURATION CONTROL AND ENERGETIC PARTICLE PRODUCTION (INVITED)**  
*Gordienko V.M., Platonenko V.T.*  
*Physics Faculty and International Laser Center M.V. Lomonosov Moscow State University, Russia*
- 9.20-9.40                    FILAMENTATION OF INTENSITY FEMTOSECOND PULSES IN OPTICALLY TRANSPARENT GASEOUS AND SOLID STATE MEDIA (INVITED)**  
*E.V. Pestryakov, V.I. Trunov, E.F. Martynovich, S.A. Frolov*  
*Institute of Laser Physics SB RAS, Novosibirsk, Russia*
- 9.40-10.00                    NS LASER PLASMAS FOR COMBUSTION INITIATION (INVITED)**  
*Ernst Wintner*  
*TU Wien, Austria*
- 10.00-10.15                    ELECTRON ACCELERATION BY PEARL (PETAWATT PARAMETRIC RUSSIAN LASER) (ORAL)**  
*Shaykin Andrey*  
*Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS), Russia*
- 10.15-10.30                    MULTI-FILAMENTATION OF HIGH-POWER FEMTOSECOND LASER PULSES IN AIR: OPTICAL AND ACOUSTIC PROBING (ORAL)**  
*S.I. Kudryashov, A.A. Ionin, S.V. Makarov, L.V. Seleznev, D.V. Sinitsyn*  
*P.N. Lebedev Physical Institute of RAS, Russia*

Tuesday, October 20, 2009

**Hall A:                    Session ILT ALT2:  
Industrial Laser Technologies, Advanced Laser  
Technologies for Material Processing**

- 11.30-11.50                    THIN FILMS FABRICATION FOR NANO- AND OPTOELECTRONICS BY THE PLD METHOD (INVITED)**  
*Novodvorsky O.A.*  
*Institute on Laser and Information Technologies of the Russian Academy of Sciences (ILIT RAS), Russia*
- 11.50-12.10                    ZnO LAYERS PREPARED BY PLD (INVITED)**  
*Jaroslav Bruncko*  
*International Laser Center, Slovak Republic*
- 12.10-12.25                    CARBON NITRIDE FILM SYNTHESIS BY DEPOSITION OF SPECIES CREATED UNDER PULSED LASER GRAPHITE ABLATION IN NITROGEN ATMOSPHERE (ORAL)**  
*Kuzyakov Yu.Ya., Varakin V.N., Moskvitina E.N.*  
*M.V. Lomonosov Moscow State University, Chemistry Department, Laser Chemistry Division, Russia*
- 12.25-12.40                    INTERACTION BETWEEN ABLATIVE PLASMA AND TARGET DURING DEEP NANOSECOND LASER ABLATION OF GRAPHITE: THERMAL OR MECHANICAL EFFECTS? (ORAL)**  
*S.I. Kudryashov<sup>1</sup> A.V. Bulgakov<sup>2</sup> N.M. Bulgakova<sup>2</sup> A.B. Evtushenko<sup>2,3</sup>, Yu.G. Shukhov<sup>2</sup>, A.A. Tikhov<sup>1</sup>*  
*<sup>1</sup>P.N. Lebedev Physical Institute of RAS, <sup>2</sup>Institute of Thermophysics, SB RAS, <sup>3</sup>Novosibirsk State University, Russia*

Tuesday, October 20, 2009

**Hall B:                      Session ULP SA 2:  
Ultrashort Laser Pulses – Science and Applications**

- 11.30-11.50                      DIELECTRIC PROPERTIES OF CHIRAL –LOW-DIMENSIONAL MEDIA IN THE TERAHERTZ FREQUENCY RANGE (INVITED)**  
***Shkurinov A.P.***  
*Physics Faculty and International Laser Center, M.V.Lomonosov State University, Russia*
- 11.50-12.05                      TIME-RESOLVED DIAGNOSIS OF FEMTOSECOND LASER INDUCED MICROPLASMA EVOLUTION IN A BULK OF SOLIDS BY THIRD HARMONIC GENERATION TECHNIQUE (ORAL)**  
***F.V. Potemkin, V.M. Gordienko, P.M. Mikheev***  
*Physics Faculty and International Laser Center M.V. Lomonosov Moscow State University, Russia*
- 12.05-12.20                      HIGH INTENSITY AND ULTRAFAST PULSE LASER DAMAGE OF SEMICONDUCTOR MATERIALS (ORAL)**  
***Tzvetta Apostolova<sup>1</sup>, Sergey I. Kudryashov<sup>2</sup> and Andrei A. Ionin<sup>2</sup>***  
*<sup>1</sup>Institute of Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences, Bulgaria*  
*<sup>2</sup>P.N. Lebedev Physical Institute, RAS, Russia*
- 12.20-12.35                      INVESTIGATION OF FORMATION NANOSTRUCURIZED THIN FILMS IN PROCESSES OF FEMTOSECOND LASER DEPOSITION (ORAL)**  
***Gerke M.N, Kutrovskay S.V., Kucherik A.O., Prokoshev V.G., Arakelian S.M.***  
*Vladimir State University, Russia*

Tuesday, October 20, 2009

**Hall A:                    Session NLSA HPLA 1:  
Novel Laser Systems and Applications, High-Power Lasers  
and Applications**

- 15.00-15.20                    MODELING OF LASING IN CHEMICAL OXYGEN-IODINE LASERS WITH  
UNSTABLE RESONATORS (INVITED)**  
*B. D. Barmashenko*  
*Ben-Gurion University of the Negev, Israel*
- 15.20-15.40                    RECENT STUDIES OF THE CHEMICAL OXYGEN-IODINE LASER  
OPERATION MECHANISM (INVITED)**  
*K. Waichman<sup>1</sup>, B.D. Barmashenko<sup>2</sup> and S. Rosenwaks<sup>2</sup>*  
*<sup>1</sup>Physics Department, NRCN, Israel*  
*<sup>2</sup>Ben-Gurion University of the Negev, Israel*
- 15.40-15.55                    TRANSVERSE GAS FLOW RADIO FREQUENCY SLAB DISCHARGE  
GENERATOR OF SINGLET DELTA OXYGEN (ORAL)**  
*Andrey A.Ionin<sup>1</sup>, Yury M.Klimachev<sup>1</sup>, Oleg A.Rulev<sup>1</sup>, Leonid V.Seleznev<sup>1</sup>, Dmitry  
V.Sinitsyn<sup>1</sup>, Igor V.Kochetov<sup>2</sup>, Anatoly P.Napartovich<sup>2</sup>*  
*<sup>1</sup>P.N. Lebedev Physical Institute of RAS, Russia*  
*<sup>2</sup>Troitsk Institute for Innovation and Fusion Research, Russia*
- 15.55-16.10                    POSSIBILITY OF INCREASING OF THE EXCIMER LASER EMISSION TIME  
DURATION (ORAL)**  
*Malashin M.V., Khasaya R.R., Khomich V. U., Yamschikov V.A.*  
*Institute for Electrophysics and Electric Power, RAS, Russia*

Tuesday, October 20, 2009

- Hall B:                      Session SN OA:  
Semiconductor nanoclusters for optoelectronic applications**
- 15.00-15.20                      OPTICAL PROPERTIES OF SILICON NANOCRYSTALS IN SILICON  
DIOXIDE MATRIX OVER WIDE RANGES OF EXCITATION INTENSITY AND  
ENERGY (INVITED)  
Timoshenko V.  
M.V. Lomonosov Moscow State University, Russia**
- 15.20-15.40                      PHASE TRANSFORMATION, STRUCTURE, OPTICAL, ELECTRICAL AND  
LUMINESCENT PROPERTIES OF SILICON NANOCRYSTALS IN SILICON  
SUBOXIDE MATRIX: PERCOLATION APPROACH (INVITED)  
V.N. Seminogov<sup>1</sup>, V.I. Sokolov<sup>1</sup>, V.N. Glebov<sup>1</sup>, A.M. Malyutin<sup>1</sup>, E.V. Troitskaya<sup>1</sup>, S.I.  
Molchanova<sup>1</sup>, G.A. Dubrova<sup>1</sup>, A.S. Akhmanov<sup>1</sup>, V.Ya. Panchenko<sup>1</sup>, V.Yu. Timoshenko<sup>2</sup>,  
D.M. Zhigunov<sup>2</sup>, P.A. Forsh<sup>2</sup>, O.A. Shalygina<sup>2</sup>, N.E. Maslova<sup>2</sup>, S.S. Abramchuk<sup>2</sup>, P.K.  
Kashkarov<sup>2</sup>  
1Institute on Laser and Information Technologies RAS, Russia  
2Faculty of Physics, M.V. Lomonosov Moscow State University, Russia**
- 15.40-16.00                      SIZE CONTROLLED SI NANOCRYSTALS FOR OPTICS AND ELECTRONICS  
(INVITED)  
M.Zacharias  
University of Freiburg, Germany**
- 16.00-16.15                      SPATIAL LIGHT LOCALIZATION IN GROOVED SILICON MATRIX (ORAL)  
S.A. Dyakov<sup>1</sup>, D.A. Mamichev<sup>1</sup>, A.V. Emelyanov<sup>1</sup>, V.Yu. Timoshenko<sup>1</sup>, P.K. Kashkarov<sup>1</sup>,  
E. V. Astrova<sup>2</sup>, T. S. Perova<sup>3</sup>  
1Moscow State University, Faculty of Physics, Russia  
2Ioffe Physical Technical Institute, RAS, Russia  
3Dept. of Electronic and Electrical Engineering, Trinity College Dublin, Ireland**

## **POSTERS SESSION ILT ALT**

### **Industrial Laser Technologies, Advanced Laser Technologies for Material Processing.**

1. A.A. Lotin, O.A. Novodvorsky, E.V. Khaydukov  
*Institute on Laser and Information Technologies, RAS*  
"The nonlinear optical amplification observed in the rod structures and multiple quantum wells based on ZnO" (Poster)
2. V.S.Mayorov, S.V.Mayorov, M.D.Khomenko, R.V.Grishaev  
*Institute on Laser and Information Technologies, RAS*  
"RESIDUAL STRAIN STUDY IN LASER CUTTING" (Poster)
3. E. Drakaki, B. Klingenberg, I. Tsilikas, E. Zoros, M. Kandyla and A.A.Serafetinides  
*University of Athens, Greece*  
"Laser cleaning of corroded metal coins using laser techniques" (Poster)
4. V.V. Vasiltsov, M.G. Galushkin  
*Institute on Laser and Information Technologies, RAS*  
"Optimization of laser beam parameters and process variables in cutting metals with powerful fiber lasers" (Poster)
5. Peter Petrov  
*Institute of Electronics, Bulgarian Academy of Sciences Sofia, Bulgaria*  
"CO<sub>2</sub> laser beam welding of low alloyed steels" (Poster)
6. Antipov A.A., Kutrovskay S.V., Kucherik A.O., Nogtev D.S., Prokoshev V.G., Arakelian S.M.  
*Vladimir State University, Russia*  
"Deposition of metals particles on a surface of materials from colloidal systems under action of laser radiation" (Poster)
7. Kucherik A.O., Prokoshev V.G., Tarasov R.E., Arakelian S.M.  
*Vladimir State University, Russia*  
"Investigation of modification surface at laser action by method of 3D-relief reconstruction" (Poster)
8. Evseev A (1), Kamayev S (1), Kotzuba E. (1), Markov M (1), Michrin V (2), Novikov M (1), Surovtsev M (2).  
<sup>1</sup>*Institute on Laser and Information Technologies, RAS*, <sup>2</sup>*OAO R&D Inst. "Yarsintez", Yaroslavl, Russia*  
"Development of photo-curable composition and technique for thin-layer (till 10 μm) objects manufacturing" (Poster)
9. Antipov A.A, Kutrovskay S.V., Kucherik A.O., Prokoshev V.G., Arakelian S.M.  
*Vladimir State University, Russia*  
"Forming of extended nanostructures massive at laser action" (Poster)
10. Ye. A. Cherebilo<sup>1</sup>, O. A. Novodvorsky<sup>1</sup>, V. Ya. Panchenko<sup>1</sup>, O. D. Khramova<sup>1</sup>, L. S. Parshina<sup>1</sup>, C. Wenzel<sup>2</sup>, N. Trumpaicka<sup>2</sup>, J. W. Bartha<sup>2</sup>

<sup>1</sup>*Institute on Laser and Information Technologies, RAS*, <sup>2</sup>*Dresden University of Technology, Institute of Semiconductor and Microsystems Technology, Germany*

"Thermal annealing influence on properties of nitrogen and phosphorus doped ZnO thin films fabricated by pulsed laser deposition" (Poster)

11. L. S. Parshina<sup>1</sup>, O. A. Novodvorsky<sup>1</sup>, V. Ya. Panchenko<sup>1</sup>, O. D. Khramova<sup>1</sup>, Ye. A. Cherebilo<sup>1</sup>, C. Wenzel<sup>2</sup>, N. Trumpaicka<sup>2</sup>, J. W. Bartha<sup>2</sup>

<sup>1</sup>*Institute on Laser and Information Technologies, RAS*, <sup>2</sup>*Dresden University of Technology, Institute of Semiconductor and Microsystems Technology, Germany*

Photoluminescence spectra of nitrogen and phosphorus doped ZnO thin films fabricated by pulsed laser deposition" (Poster)

12. Khaydukov E.V., Rocheva V.V., Lotin A.A. Novodvorsky O.A., Panchenko V.Ya  
*Institute on Laser and Information Technologies, RAS*

"The CBPLD method for the silicon films deposition" (Poster)

13. Rocheva V.V., Khaydukov E.V., Lotin A.A., Novodvorsky O.A., Khramova O.D.  
*Institute on Laser and Information Technologies, RAS*

"Morfology of the amorphous Si thin films received at various deposition temperatures by the CBPLD method" (Poster)

14. A.F. Mukhamedgalieva<sup>1</sup>, A.M.Bondar<sup>1</sup>, A.A.Ionin<sup>2</sup>, Yu.M.Klimachev<sup>2</sup>, D.V.Sinitsyn<sup>2</sup>, V.D.Zworykin<sup>2</sup>

<sup>1</sup>*M.V. Lomonosov Moscow State University*, <sup>2</sup>*P.N.Lebedev Physical Institute, RAS*

"The peculiarity of laser ablation of quartz, fused silica and natural silicates induced by pulsed CO<sub>2</sub> laser irradiation" (Poster)

15. V.A. Karasev, V.S. Golubev, E.O. Filippova

*Institute on Laser and Information Technologies, Russian Academy of Sciences*

"Investigation of microrelief structure of cut surface in gas-assisted laser separation of materials" (Poster)

16. V.A. Karasev, V.S. Golubev, E.O. Filippova

*Institute on Laser and Information Technologies, Russian Academy of Sciences*

"Thermal efficiency and effective coefficient of laser radiation energy absorption in gas-assisted laser cutting of low-carbon steel in atmosphere of nitrogen and air" (Poster)

17. V.G. Nizieva<sup>1</sup>, F.Kh. Mirzade<sup>1</sup>, A.V. Koldoba<sup>2</sup>

<sup>1</sup>*Institute on Laser and Information Technologies, RAS*, <sup>2</sup>*Institute of Applied Mathematics, RAS*

"Numerical modeling of crystallization at selective laser sintering of fine-dyspersated metal powders" (Poster)

18. Khramova O.D.<sup>1</sup>, Novodvorsky O.A.<sup>1</sup>, Khaydukov E.V.<sup>1</sup>, Poroykov A. Yu.<sup>2</sup>, Rocheva V.V.<sup>1</sup>, Zuev D.A.<sup>1</sup>, Dvorkin V.V.<sup>2</sup>, Akhmanov A.S.<sup>1</sup>, Panchenko V.Ya.<sup>1</sup>

<sup>1</sup>*Institute on Laser and Information Technologies, Russian Academy of Sciences*, <sup>2</sup>*D.V. Skobeltsyn Institute of Nuclear Physics Lomonosov Moscow State University*

"Surface modification of crystalline silicon created by 532 nm nanosecond Nd:YAG laser pulses" (Poster)



## **POSTERS SESSION ULP SA**

### **Ultrashort Laser Pulses – Science and Applications.**

1. S.I. Kudryashov, A.A. Ionin, L.V. Seleznev, D.V. Sinitsyn

*P.N. Lebedev Physical Institute of RAS*

"Femtosecond laser microstructuring inside bulk transparent materials: optical and acoustic studies" (Poster)

2. A.A. Ionin<sup>1</sup>, S.I.Kudryashov<sup>1</sup>, S.V.Makarov<sup>1</sup>, Yu.N.Novoselov<sup>1</sup>, L.V.Seleznev<sup>1</sup>, D.V.Sinitsyn<sup>1</sup>, A.E.Ligachev<sup>2</sup>, E.V.Golosov<sup>3</sup>, Yu.R.Kolobov<sup>3</sup>

<sup>1</sup>*P.N. Lebedev Physical Institute of RAS*, <sup>2</sup>*Prokhorov General Physics Institute of RAS*, <sup>3</sup>*Belgorod University, Russia*

"Femtosecond laser fabrication of subwavelength quasi-periodic structures on Ti surface: topology evolution and physical processes" (Poster)

Wednesday, October 21, 2009

**Hall A:                    Session NLSA HPLA 2:  
Novel Laser Systems and Applications, High-Power Lasers  
and Applications**

- 9.00-9.20                    MODELING OF HIGH-POWER OPERATION OF 2  $\mu$ M CO-DOPED Tm, Ho  
SOLID-STATE LASERS (INVITED)**  
*O. A. Louchev<sup>1</sup>, Y. Urata<sup>1</sup>, M. Umoto<sup>2</sup>, N. Saito<sup>2</sup> and S. Wada<sup>2</sup>*  
*<sup>1</sup>Megaopto Co. Ltd., RIKEN Cooperation Center, Japan*  
*<sup>2</sup>Solid-State Optical Science Research Unit, RIKEN, Japan*
- 9.20-9.40                    199 NM LIGHT SOURCE USING A FIBER/BULK HYBRID AMPLIFIER FOR  
ADVANCED INSPECTION APPLICATION (INVITED)**  
*Yoshiharu Urata*  
*Megaopto Co., Ltd. RIKEN (Institute of Physical and Chemical Research),  
Japan*
- 9.40-10.00                    RF DISCHARGE SLAB CARBON MONOXIDE LASER: A COMPACT SOURCE  
OF LASER RADIATION WITHIN ~2.5 – 4.0 AND ~5.0 - 6.5 MICRON (INVITED)**  
*Andrey A.Ionin, Andrey Yu.Kozlov, Leonid V.Seleznev and Dmitry  
V.Sinitsyn*  
*The Lebedev Physical Institute of the Russian Academy of Sciences, Russia*
- 10.00-10.15                    STUDY OF SPATIAL-TEMPORAL CHARACTERISTICS OF CR<sup>4+</sup>: YAG Q-  
SWITCHED DIODE –PUMPED ND:YAG LASER (ORAL)**  
*Margarita Deneva<sup>1</sup>, Dimitar Dimitrov<sup>1</sup>, Marin Nenchev<sup>1</sup>, Johannes Tauer<sup>2</sup>, Ernst  
Wintner<sup>2</sup>*  
*<sup>1</sup>Technical University-Sofia, Bulgaria,*  
*<sup>2</sup>Photonics Institute, Vienna University of Technology, Austria*

Wednesday, October 21, 2009

**Hall B:                    Session LTMP NBA1:  
Laser Technologies for Medical Physics and Biomedicine,  
Nanoparticles for Biomedical Applications**

- 9.00-9.20                    MOLECULAR LIBRARIES: FABRICATION, LASER PROCESSING AND APPLICATIONS (INVITED)**  
*A.Nesterov-Muller, F.Breitling, R.Bischoff, V.Stadler*  
*Department of Chip-Based Peptide Libraries, German Cancer Research Centre, Germany*
- 9.20-9.40                    NONLINEAR OPTICAL IMAGING OF NANOPARTICLE PENETRATION IN HUMAN SKIN (INVITED)**  
*A. V. Zvyagin<sup>1\*</sup>, X. Zhao<sup>1</sup>, Z. Song<sup>1</sup>, T. Kelf<sup>1</sup>, W. Sanchez<sup>2</sup>, M. S. Roberts<sup>2</sup>*  
*<sup>1</sup>MQ Photonics Centre, Physics & Engineering, Macquarie University, Australia,*  
*<sup>2</sup>Therapeutics Research Unit, School of Medicine, The University of Queensland, Princess Alexandra Hospital, Australia*
- 9.40-9.55                    STUDY OF A PENETRATION OF A LASER LIGHT IN HUMAN DENTAL CHANNELS (ORAL)**  
*P. Uzunova<sup>1</sup>, T. Uzunov<sup>2</sup>, M. Deneva<sup>3</sup>, M. Nenchev<sup>3#</sup>*  
*<sup>1</sup>Faculty of Medicine – Medical University, Sofia, Bulgaria*  
*<sup>2</sup>Faculty of stomatology – Medical University, Sofia, Bulgaria*  
*<sup>3</sup>Technical University – Sofia, Bulgaria,*  
*<sup>4</sup>IE-Bulgarian Academy of Science, Bulgaria*
- 9.55-10.10                    BASIC PHYSICAL PROCESSES AND PERSPECTIVES OF FEMTOSECOND LASER EYE MICRO-SURGERY (ORAL)**  
*A.A. Ionin<sup>1</sup>, S.E. Kozhushko<sup>1</sup>, S.I. Kudryashov<sup>1</sup>, L.V. Seleznev<sup>1</sup>, D.V. Sinitsyn<sup>1</sup>, S.D. Zakharov<sup>1</sup>, A.V. Alekhin<sup>2</sup>, V.G. Likhvantseva<sup>2</sup>, M.V. Samoylov<sup>2</sup>*  
*<sup>1</sup>P.N. Lebedev Physical Institute of RAS, Russia*  
*<sup>2</sup>Central Clinics of RAS, Russia*
- 10.10-10.25                    ESTIMATION OF THERMAL INFLUENCE OF ULTRA-VIOLET LIGHT ON HUMAN SKIN THAT CONTAINS TiO<sub>2</sub> NANOPARTICLES (ORAL)**  
*I.Krasnikov<sup>1</sup>, A. Seteikin<sup>1</sup>, A. Popov<sup>2</sup>*  
*<sup>1</sup>Amur State University, Russia,*  
*<sup>2</sup>University of Oulu, Finland, International Laser Center, M.V. Lomonosov Moscow State University, Russia*

Wednesday, October 21, 2009

**Hall A:                    Session NLSA HPLA 3:  
Novel Laser Systems and Applications, High-Power Lasers  
and Applications**

**11.30-11.45                    LASER MODES WITH AXIALLY SYMMETRIC POLARIZATION  
(SELECTIVE PROBLEMS OF GENERATION AND APPLICATIONS) (ORAL)**

*V.G. Niziev*

*Institute on Laser and Information Technologies, RAS, Russia*

**11.45-12.00                    EFFICIENT STABLE 3D RESONATORS IN INDUSTRIAL CO<sub>2</sub> LASERS WITH  
FAST TRANSVERSE GAS FLOWING (ORAL)**

*V.P. Yakunin<sup>1</sup>, A.N. Grezev<sup>2</sup>, N.G. Turkin<sup>3</sup>*

*<sup>1</sup>Institute on Laser and Information Technologies RAS, Russia*

*<sup>2</sup>Laser Complexes JSC, Russia*

*<sup>3</sup>Troitsk Institute of Innovation and Fusion Research, Russia*

**12.00-12.15                    HIGH-POWER CO<sub>2</sub> LASER WITH UNSTABLE CONFOCAL OFF-AXIS  
RESONATOR OF THE TYPE OF "OPTICAL CYLINDER (ORAL)**

*M.G. Galushkin<sup>1</sup>, V.P. Yakunin<sup>1</sup>, N.G. Turkin<sup>2</sup>*

*<sup>1</sup>Institute on Laser and Information Technologies RAS, Russia*

*<sup>2</sup>Troitsk Institute of Innovation and Fusion Research, Russia*

**12.15-12.30                    FREQUENCY CONVERSION OF CO LASER RADIATION (ORAL)**

*Yury M. Andreev<sup>1</sup>, Andrey A. Ionin<sup>2</sup>, Igor O. Kinyaevskiy<sup>2</sup>, Yuriy M. Klimachev<sup>2</sup>, Andrey  
A. Kotkov<sup>2</sup>, Andrey Yu. Kozlov<sup>2</sup>, Alexander N. Morozov<sup>3</sup>*

*<sup>1</sup>Institute of Monitoring of Climatic and Ecological Systems, SB RAS, Russia*

*<sup>2</sup>P.N.Lebedev Physical Institute of RAS, Russia*

*<sup>3</sup>Siberian Physics-Technical Institute of Tomsk State University, Russia*

Wednesday, October 21, 2009

**Hall B:                   Session LTMP NBA 2:  
Laser Technologies for Medical Physics and Biomedicine,  
Nanoparticles for Biomedical Applications**

**11.30-11.50                   LASER APPLICATIONS IN PHOTODYNAMIC MEDICINE (INVITED)**  
*Herbert Stepp*  
*Laser Researchlaboratory, LIFE Center University Clinic Munich, Germany*

**11.50-12.10                   PHOTONICS AND LASER-OPTICAL TECHNOLOGIES OF GAS EXCHANGE  
PROCESSES IN BIOLOGICAL TISSUE (INVITED)**  
*Mustafo Asimov*  
*Institute of Physics National Academy of Science of Belarus, Belarus*

**12.10-12.25                   OPTOACOUSTIC METHOD FOR MEASUREMENT OF THE LOCAL LIGHT  
ABSORPTION COEFFICIENT IN BIOLOGICAL TISSUES (ORAL)**  
*Pelivanov I.M., Barskaya M.I., Podymova N.B., Khokhlova T.D.,  
Karabutov A.A.*  
*International Laser Center of MSU, Russia*

**12.25-12.40                   LOCAL FLUORESCENCE SPECTROSCOPY FOR CLINICAL APPLICATION  
(ORAL)**  
*Natalia Bulgakova<sup>1</sup>, Victor Sokolov<sup>2</sup>*  
*<sup>1</sup>M.A. Prokhorov General Physics Institute of Russian Academy of Science, Russia*  
*<sup>2</sup>P.A. Herten Moscow Research Oncological Institute, Russia*

Wednesday, October 21, 2009

**Hall A:                    Session ILT ALT3:  
Industrial Laser Technologies,    Advanced Laser  
Technologies for Material Processing**

**15.00-15.20                    LASER ASSISTED METAL FORMING WITH PARTICULAR ATTENTION  
PAID TO HYDROFORMING (INVITED)**

*Alexander Kratky*

*University of Technology, Vienna, Austria*

**15.20-15.40                    EXPERIMENTAL SEARCH OF SCALING LAWS FOR LASER-OXYGEN  
CUTTING OF MILD STEEL BASED ON SIMILARITY CRITERIA (INVITED)**

*A.M. Orishich, V.B. Shulyatyev, A.G. Malikov*

*Khristianovich Institute of Theoretical and Applied Mechanics SB RAS,  
Russia*

**15.40-15.55                    PROGRAM SYSTEM FOR LASER CUTTING (ORAL)**

*Vladimir S. Mayorov<sup>1</sup>, Sergey V. Mayorov<sup>1</sup>, Sergei M. Komarov<sup>2</sup>*

*<sup>1</sup>Institute on Laser and Information Technologies, RAS, Russia*

*<sup>2</sup>Ukrainian Academy of Printing, Ukraine*

**15.55-16.10                    IMPORTANCE OF GASES IN LASER CUTTING (ORAL)**

*Mario Boschini*

*SIAD S.p.A., Italy*

Wednesday, October 21, 2009

**Hall B:                      Session LS PM D:  
Laser Spectroscopy, Precision Measurements, and  
Diagnostics**

**15.00-15.15                      THE EFFECT OF NONLOCALITY ON THE PROPAGATING SURFACE  
PLASMON SPECTROSCOPY (KRETSCHMAN CONFIGURATION) (ORAL)**

**Z. D. Genchev<sup>1</sup> and H. Y. Stoyanov<sup>2</sup>**

*<sup>1</sup>Institute of Electronics "E. Djakov", Bulgarian Academy of Sciences, Bulgaria*

*<sup>2</sup>Faculty of Physics, Sofia University "St. Kl. Ohridski", Bulgaria*

**15.15-15.30                      NONLINEAR ZEEMAN SPECTROSCOPY OF NITRIC OXIDE IN A STRONG  
MAGNETIC FIELD (ORAL)**

**A.A. Ionin, Yu.M. Klimachev, A.A. Kotkov, A.Yu. Kozlov**

*P.N. Lebedev Physical Institute of RAS, Russia*

## **POSTERS SESSION NLSA HPLA**

### **Novel Laser Systems and Applications, High-Power Lasers and Applications**

1. K. A. Temelkov<sup>1</sup>, N. K. Vuchkov<sup>1</sup>, I. Freijo-Martin<sup>2</sup>, M. S. Ilieva<sup>3</sup>, R. P. Ekov<sup>1</sup>, E. P. Atanassov<sup>1</sup>, N. Sabotinov<sup>1</sup>

<sup>1</sup>*Institute of Solid State Physics, Bulgarian Academy of Sciences*, <sup>2</sup>*Institute of Solid State Physics, Bulgarian Academy of Sciences*, <sup>3</sup>*Institute of Physical Chemistry, Bulgarian Academy of Sciences*

"Deep ultraviolet copper ion laser: physics and applications" (Poster)

2. K. A. Temelkov<sup>1</sup>, N. K. Vuchkov<sup>1</sup>, I. Freijo-Martin<sup>2</sup>, L. I. Stoychev<sup>1</sup>, R. P. Ekov<sup>1</sup>, E. P. Atanassov<sup>1</sup>, L. Lyutov<sup>3</sup>, N. V. Sabotinov<sup>1</sup>

<sup>1</sup>*Metal Vapour Lasers Laboratory, Institute of Solid State Physics, Bulgarian Academy of Sciences*, <sup>2</sup>*Metal Vapour Lasers Laboratory, Institute of Solid State Physics, Bulgarian Academy of Sciences*, <sup>3</sup>*Faculty of Chemistry, Sofia University*

"Middle infrared laser system: physics and applications" (Poster)

3. M.G. Galushkin<sup>1</sup>, V.P. Yakunin<sup>1</sup>, N.G. Turkin<sup>2</sup>

<sup>1</sup>*Institute on Laser and Information Technologies RAS*, <sup>2</sup>*Troitsk Institute of Innovation and Fusion Research*

"Matching of parameters of thermal gas lens and stable resonator in high-power diffusion-cooled industrial CO<sub>2</sub> lasers" (Poster)

4. M.G.Galushkin<sup>1</sup>, K.V. Mitin<sup>2</sup>, A.M. Seryogin<sup>2</sup>

<sup>1</sup>*Institute on Laser and Information Technologies, RAS*, <sup>2</sup>*FSUE "SPA Astrophysica"*

"Raman laser with low threshold of generation" (Poster)

5. M.G.Galushkin<sup>1</sup>, K.V. Mitin<sup>2</sup>, A.M. Seryogin<sup>2</sup>

<sup>1</sup>*Institute on Laser and Information Technologies, RAS*, <sup>2</sup>*FSUE "SPA Astrophysica"*

"Improvement of Raman laser radiation quality" (Poster)

6. M.G.Galushkin<sup>1</sup>, K.V. Mitin<sup>2</sup>, A.M. Seryogin<sup>2</sup>, D.V.Zelenin<sup>2</sup>

<sup>1</sup>*Institute on Laser and Information Technologies, RAS*, <sup>2</sup>*FSUE "SPA Astrophysica"*

"About absolute instability of phase conjugation in SBS media" (Poster)



## **POSTERS SESSION LTMP NBA**

### **Laser Technologies for Medical Physics and Biomedicine, Nanoparticles for Biomedical Applications**

1. Kucherik A.O., Prokoshev V.G., Troitckiy D.P., Arakelian S.M.  
*Vladimir State University, Russia*  
"Laser Doppler diagnostics of the capillary blood stream system" (Poster)
2. SORA Sergiu<sup>1</sup>, ION Rodica Mariana<sup>1,2</sup>  
*1- Valahia University, Targoviste, 2- ICECHIM, Bucuresti*  
"Synthesis of Fe<sub>3</sub>O<sub>4</sub> magnetic nanoparticles for embedding in K562 tumoral cells" (Poster)
3. Radu Claudiu Fierascu, Irina Dumitriu, Rodica Mariana Ion  
*Valahia University of Targoviste, Romania*  
"NOBLE METAL NANOPARTICLES FOR BIOMEDICAL APPLICATIONS" (Poster)
4. Angelov, I.<sup>a</sup>, Gisbrecht, A.<sup>b</sup>, Uzunov, Tz.<sup>c</sup>  
*<sup>a</sup>Institute of Organic Chemistry, Bulgarian Academy of Sciences, <sup>b</sup>Institute of Electronics, Bulgarian Academy of Sciences, <sup>c</sup>Medical University, Bulgaria*  
"LIGHT CONTROL OF TOOTH BLEACHING PROCESS" (Poster)
5. S.A. Cherebilo<sup>1</sup>, A.V. Evseev<sup>1</sup>, P.N. Mitroshenkov<sup>2</sup>  
*<sup>1</sup>Institute on Laser and Information Technologies, RAS, <sup>2</sup>Samara regional clinical hospital*  
"Laser stereolithography in cosmetic surgery" (Poster)
6. E. Borisova, L. Avramov  
*Institute of Electronics, Bulgarian Academy of Sciences*  
"Exogenous sensitizers' applications in photodiagnosis, photodynamic therapy, radiation therapy, and boron neutron capture therapy" (Poster)
7. E. Borisova<sup>1</sup>, L. Avramov<sup>2</sup>, Tz. Uzunov<sup>3</sup>  
*<sup>1</sup>Institute of Electronics, Bulgarian Academy of Sciences, <sup>2</sup>Dentistry Department, Medical University-Sofia, Bulgaria*  
"Combined fluorescence and reflectance detection of tooth caries" (Poster)
8. K. Koev<sup>1</sup>, E. Borisova<sup>2</sup>, L. Avramov<sup>2</sup>  
*<sup>1</sup>Department of ophthalmology, Medical University-Sofia, Bulgaria, <sup>2</sup>Institute of Electronics, Bulgarian Academy of Sciences*  
"He-Ne LOW LEVEL LASER THERAPEUTIC APPLICATIONS FOR TREATMENT OF IRIDOCYCLITIS ACUTA" (Poster)
9. M.M. Asimov<sup>a</sup>, R.M. Asimov<sup>b</sup>, A.N. Rubinov<sup>a</sup>, S.A. Mamilov<sup>c</sup>, Yu.S. Plaksiy<sup>c</sup>, S.S. Esman<sup>c</sup>, A.I. Gisbrecht<sup>d</sup>  
*<sup>a</sup>Institute of Physics Academy of Science of Belarus, <sup>b</sup>Applied Systems Ltd, Belarus, <sup>c</sup>Institute of Applied Problems of Physics and Biophysics Academy of Science of Ukraine, <sup>d</sup>Institute of Electronics Bulgarian Academy of Science*  
"Novel Laser-optical Technology of Photodecomposition of Blood Carboxyhemoglobin and Elimination of Carbon Monoxide Poisoning Effect" (Poster)
10. M.M. Asimov<sup>a</sup>, R.M. Asimov<sup>b</sup>, A.N. Rubinov<sup>a</sup>, A.I. Gisbrecht<sup>c</sup>

*<sup>a</sup>Institute of Physics National Academy of Science of Belarus, <sup>b</sup>"Applied Systems Ltd.", Belarus, <sup>c</sup>Institute of Electronics Bulgarian Academy of Science*  
"Laser - Optical Methods of Detection and Elimination the Local Tissue Hypoxia: New Approaches in Prediction and Prevention the Risk of Solid Tumor Formation"(Poster)

11. A.V. Evseev

*Institute on Laser and Information Technologies*

"Computer modeling and laser stereolithography for medical application" (Poster)

## **POSTERS SESSION LS PM D**

### **Laser Spectroscopy, Precision Measurements, and Diagnostics**

1. V.A.Simonova<sup>1</sup>, A.A.Karabutov<sup>2</sup>, E.V.Savateeva<sup>1</sup>, A.N.Zharinov<sup>2</sup>, V.Ya.Panchenko<sup>1</sup>  
<sup>1</sup>*Institute on Laser and Information Technologies, RAS*, <sup>2</sup>*M.V.Lomonosov Moscow State University International Laser Center*

"Focused array transducer for opto-acoustic and laser-ultrasonic tomography" (Poster)

2. A.A.Karabutov<sup>1</sup>, E.V.Savateeva<sup>2</sup>, M.A.Slepkova<sup>1</sup>

<sup>1</sup>*M.V.Lomonosov Moscow State University International Laser Center*, <sup>2</sup>*Institute on Laser and Information Technologies, RAS*

"Contact laser ultrasonic Technique for quantitative evaluation of composites structure" (Poster)

3. Zahary Y. Peshev and Atanaska D. Deleva

*Institute of Electronics, Bulgarian Academy of Sciences*

"LIDAR STUDY OF THE DYNAMICS OF OROGRAPHIC CLOUDS COVERING MOUNTAINOUS SURFACE" (Poster)

4. A.Akhmanov, I.Voronin

*Institute on Laser and Information Technologies, RAS*

"Wireless Sensors Networks for Diagnostics and Monitoring in Industry and Ecology" (Poster)

5. Banishev A.F.<sup>1</sup>, Banishev A.A.<sup>1</sup>, Bolshukhin V.A.<sup>2</sup>, Syrov Yu.V.<sup>3</sup>, Khort A.M.<sup>3</sup>

<sup>1</sup>*Institute on Laser and Information Technologies, RAS*, <sup>2</sup>*FGUP NII "Platan", Russia*, <sup>3</sup>*M.V. Lomonosov Moscow State Academy of Fine Chemical Technology, Russia*

"Investigation of mechanoluminescence of fine disperse powders for production of mechanical impact detecting elements" (Poster)

6. Atanaska D. Deleva, Zahary Y. Peshev, Lachezar A. Avramov

*Institute of Electronics, Bulgarian Academy of Sciences*

"LASER REMOTE SENSING OF TROPOSPHERIC AEROSOL FIELDS WITH A COMBINED RAMAN-AEROSOL LIDAR" (Poster)

7. A. Sinno<sup>1</sup>, G. Lérondel<sup>2</sup>, L. Chassagne<sup>1</sup>, S. Blaize<sup>2</sup>, P. Ruaux<sup>1</sup>, A. Bruyant<sup>2</sup>, S. Topçu<sup>1</sup>, P. Royer<sup>2</sup> and Y. Alayli<sup>1</sup>

<sup>1</sup>*Laboratoire d'Ingénierie des Systèmes de Versailles, Université de Versailles Saint Quentin, France*, <sup>2</sup>*Laboratoire de Nanotechnologie et d'Instrumentation Optique, Institut Charles Delaunay, Université de Technologie de Troyes, France*

"Measurement of waveguide characteristics by enlarged near field optical imaging" (Poster)