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Laser Physics and Applications

Tanja Dreischuh

Dimitar Slavov

Editors

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Contents

xi	Conference Committees
xv	Introduction

SESSION 1 LASER-MATTER INTERACTION

- 7747 02 **Ultrafast dynamics in strong-field interactions with molecules and solid surfaces: high-harmonic generation and nanostructuring (Invited Paper)** [7747-16]
K. Miyazaki, G. Miyaji, K. Yoshii, Kyoto Univ. (Japan)
- 7747 03 **Laser deposition of TiO₂ for urethral catheter (Invited Paper)** [7747-68]
M. Jelínek, Institute of Physics ASCR v.v.i. (Czech Republic) and Czech Technical Univ. (Czech Republic); J. Remsa, Institute of Physics ASCR v.v.i. (Czech Republic); M. Zezulová, Czech Technical Univ. (Czech Republic)
- 7747 04 **Microprocessing of thin collagen films by ultra-short laser ablation** [7747-17]
A. Daskalova, Institute of Electronics (Bulgaria); A. Manousaki, Foundation for Research and Technology-Hellas (Greece) and Univ. of Crete (Greece); D. Gray, Univ Foundation for Research and Technology-Hellas (Greece); C. Fotakis, Foundation for Research and Technology-Hellas (Greece) and Univ. of Crete (Greece)
- 7747 05 **Paper surface modification by lasers** [7747-23]
E. Zekou, D. G. Kotsifaki, A. A. Serafetinides, National Technical Univ. of Athens (Greece)
- 7747 06 **Thin film homogenization by inverse pulsed laser deposition** [7747-31]
L. Egerhazi, Z. Geretovszky, F. Bari, Univ. of Szeged (Hungary)
- 7747 07 **Fluorescence from Pb_{1-x}Cd_xSe polycrystalline films excited by non-monochromatic light at $\lambda_{\max} \approx 0.9 \mu\text{m}$** [7747-47]
A. Baranov, S. Cherevko, V. Polischuk, Saint-Petersburg State Univ. (Russian Federation); D. Slavov, L. Petrov, G. Todorov, Institute of Electronics (Bulgaria)
- 7747 08 **Preparation of gold and silver nanoparticles by pulsed laser ablation of solid target in water** [7747-22]
R. G. Nikov, A. S. Nikolov, P. A. Atanasov, Institute of Electronics (Bulgaria)
- 7747 09 **Investigation of ferromagnetic properties of LSMO nanolayers by laser modulated reflectance probe** [7747-41]
V. Pencheva, E. Alipieva, S. Penchev, I. Nedkov, T. Kutzarova, Institute of Electronics (Bulgaria)
- 7747 0A **Low cost enhancements of photomultiplier sensitivity** [7747-05]
S. W. Harmer, Manchester Metropolitan Univ. (United Kingdom); P. Townsend, Univ. of Sussex (United Kingdom)

SESSION 2 LASER SPECTROSCOPY AND METROLOGY

- 7747 0B **Coherent laser spectroscopy of rubidium atoms (Invited Paper)** [7747-64]
S. Mitra, M. M. Hossain, B. Ray, Univ. of Calcutta (India); P. N. Ghosh, Jadavpur Univ. (India); S. Cartaleva, D. Slavov, Institute of Electronics (Bulgaria)
- 7747 0C **Laser spectroscopy with nanometric cells containing atomic vapor of metal: influence of buffer gas (Invited Paper)** [7747-18]
D. Sarkisyan, Institute for Physical Research (Armenia); G. Hakhumyan, Institute for Physical Research (Armenia) and Lab. Interdisciplinaire Carnot de Bourgogne, CNRS, Univ. de Bourgogne (France); A. Sargsyan, R. Mirzoyan, Institute for Physical Research (Armenia); C. Leroy, Y. Pashayan-Leroy, Lab. Interdisciplinaire Carnot de Bourgogne, CNRS, Univ. de Bourgogne (France)
- 7747 0D **Atomic sources controlled by light: main features and applications (Invited Paper)** [7747-73]
A. Bogi, A. Burchianti, C. de Mauro, Univ. degli Studi di Siena (Italy) and CNISM (Italy); S. Gozzini, A. Lucchesini, IPCF - CNR (Italy); C. Marinelli, E. Mariotti, Univ. degli Studi di Siena (Italy) and CNISM (Italy); L. Marmugi, IPCF - CNR (Italy); L. Moi, Univ. degli Studi di Siena (Italy) and CNISM (Italy)
- 7747 0E **Dark Hanle resonance narrowing by blocking the central part of the Gaussian laser beam** [7747-55]
A. J. Krmpot, S. N. Nikoilić, S. M. Ćuk, M. Radonjić, B. M. Jelenković, Univ. of Belgrade (Serbia)
- 7747 0F **Spectroscopy of micro-fabricated Cs vapours cells for miniature atomic clocks (Best Student Paper Award)** [7747-42]
D. Miletic, C. Affolderbach, G. Mileti, Lab. Temps-Fréquence, CNRS, Univ. of Neuchâtel (Switzerland); M. Hasegawa, C. Gorecki, FEMTO-ST, CNRS, Univ. de Franche-Comté (France)
- 7747 0G **Coherent population trapping resonance structure in paraffin-coated Rb vacuum cells** [7747-58]
S. Gateva, E. Alipieva, E. Taskova, G. Todorov, Institute of Electronics (Bulgaria)
- 7747 0H **New narrow resonance in the fluorescence of closed optical transition observed in nanometric Cs-vapor layers** [7747-74]
S. Cartaleva, Institute of Electronics (Bulgaria); A. Sargsyan, D. Sarkisyan, Institute for Physical Research (Armenia); D. Slavov, K. Vaseva, Institute of Electronics (Bulgaria)
- 7747 0I **Multiple peaks due to EIT and Autler-Townes effect in lambda-probing of the strongly driven $5P_{3/2}$ manifold of cold ^{85}Rb atoms in MOT** [7747-59]
E. Paul-Kwiek, Pomeranian Univ. in Slupsk (Poland); M. Głódź, K. Kowalski, J. Szonert, Institute of Physics (Poland); S. Gateva, K. Vaseva, Institute of Electronics (Bulgaria)
- 7747 0J **On the use of effective Rabi frequency as a global MOT parameter depending on the trapping beam power** [7747-60]
M. Głódź, K. Kowalski, J. Szonert, Institute of Physics (Poland); E. Paul-Kwiek, Pomeranian Univ. in Slupsk (Poland); S. Gateva, K. Vaseva, Institute of Electronics (Bulgaria)
- 7747 0K **Four channel holographic infrared optical element** [7747-37]
B. Ivanov, M. Shopova, A. Baldjiev, E. Stoykova, V. Sainov, Institute of Optical Materials and Technologies (Bulgaria)

- 7747 OL **Dynamic laser speckle for non-destructive quality evaluation of bread** [7747-24]
E. Stoykova, B. Ivanov, M. Shopova, T. Lyubenova, Institute of Optical Materials and Technologies (Bulgaria); I. Panchev, Univ. of Food Technologies (Bulgaria); V. Sainov, Institute of Optical Materials and Technologies (Bulgaria)
- 7747 OM **Photoreflectance study of indium segregation in the InGaAs quantum well** [7747-56]
L. P. Avakyants, P. Y. Bokov, A. V. Chervyakov, Lomonosov Moscow State Univ. (Russian Federation); E. A. Glazyrin, I. P. Kazakov, P.N. Lebedev Physical Institute (Russian Federation)
- 7747 ON **Modeling of speckle noise in the interferometric phase-stepping photoelastic-coating stress analysis** [7747-25]
E. Stoykova, T. Lyubenova, V. Sainov, Institute of Optical Materials and Technologies (Bulgaria)
- 7747 OO **Coherent population trapping resonances in potassium with amplitude-modulated light** [7747-72]
S. Gozzini, L. Marmugi, INO-CNR, u.o.s. di Pisa (Italy); D. Slavov, Institute of Electronics (Bulgaria); A. Lucchesini, INO-CNR, u.o.s. di Pisa (Italy); S. Cartaleva, Institute of Electronics (Bulgaria)

SESSION 3 LASER REMOTE SENSING AND ECOLOGY

- 7747 OP **Raman-shifted eye-safe aerosol lidar (REAL) in 2010: instrument status and two-component wind measurements (Invited Paper)** [7747-62]
S. D. Mayor, California State Univ., Chico (United States)
- 7747 OQ **Laser remote sensing of tropospheric aerosols and clouds** [7747-15]
A. D. Deleva, L. A. Avramov, D. V. Stoyanov, Institute of Electronics (Bulgaria)
- 7747 OR **Lidar observation of volcanic dust layers over Sofia** [7747-51]
I. Grigorov, D. Stoyanov, G. Kolarov, Institute of Electronics (Bulgaria)
- 7747 OS **A differential detection scheme of spectral shifts in long-period fiber gratings** [7747-38]
K. Zhelyazkova, T. Effimov, The Paissi Hilendarski Univ. of Plovdiv (Bulgaria); M. Smietana, Warsaw Univ. of Technology (Poland); W. Bock, Univ. du Québec en Outaouais (Canada)
- 7747 OT **Statistical modeling of deconvolution procedures for improving the resolution of measuring electron temperature profiles in tokamak plasmas by Thomson scattering lidar** [7747-75]
T. N. Dreischuh, L. L. Gurdev, D. V. Stoyanov, Institute of Electronics (Bulgaria)
- 7747 OU **Dynamical characteristics of atmospheric layers over complex terrain probed by two-wavelength lidar** [7747-76]
Z. Y. Peshev, T. N. Dreischuh, A. D. Deleva, D. V. Stoyanov, Institute of Electronics (Bulgaria)

SESSION 4 LASERS IN BIOLOGY AND MEDICINE

- 7747 OV **Laser ablation and high precision patterning of biomaterials and intraocular lenses (Invited Paper)** [7747-57]
A. A. Serafetinides, E. Spyratou, M. Makropoulou, National Technical Univ. of Athens (Greece)

- 7747 0W **Advances in photonics design and modeling for nano- and bio-photonics applications (Invited Paper)** [7747-10]
S. Tanev, Univ. of Southern Denmark (Denmark); V. Tuchin, N.G. Chernyshevsky Saratov State Univ. (Russian Federation) and Institute of Precise Mechanics and Control (Russian Federation); P. Cheben, P. Bock, J. Schmid, National Research Council Canada (Canada); J. Pond, Lumerical Solutions, Inc. (Canada)
- 7747 0X **Will anyone remember us? Thoughts on information loss caused by progress (Invited Paper)** [7747-04]
P. Townsend, Univ. of Sussex (United Kingdom)
- 7747 0Y **New method of control of tooth whitening** [7747-43]
I. Angelov, V. Mantareva, Institute of Organic Chemistry (Bulgaria); A. Gisbrecht, Institute of Electronics (Bulgaria); S. Valkanov, Institute of Metal Science (Bulgaria); Tz. Uzunov, Medical Univ. Sofia (Bulgaria)
- 7747 0Z **Fibers and fiber end sealing caps for Er:YAG laser ablation (Best Student Paper Award)** [7747-07]
D. G. Kotsifaki, M. Makropoulou, A. A. Serafetinides, National Technical Univ. of Athens (Greece)
- 7747 10 **A dual interpretation of experimental data concerning the propagation of laser light through tissue-like turbid media** [7747-13]
I. Bliznakova, L. Gurdev, T. Dreischuh, O. Vankov, D. Stoyanov, L. Avramov, Institute of Electronics (Bulgaria)
- 7747 11 **He-Ne low level laser therapeutic applications for treatment of corneal trauma** [7747-61]
K. Koev, Medical Univ.-Sofia (Bulgaria); L. Avramov, E. Borisova, Institute of Electronics (Bulgaria)
- 7747 12 **Water-soluble phthalocyanine complexes of Ga(III) and In(III) in the photodynamic inactivation of pathogenic fungus** [7747-34]
V. Mantareva, I. Angelov, Institute of Organic Chemistry with Ctr. of Phytochemistry (Bulgaria); D. Wöhrle, Univ. Bremen (Germany); V. Dogandjiska, Medical Univ. of Sofia (Bulgaria); R. Dimitrov, Institute of Biology and Immunology of Reproduction Bulgaria); V. Kussovski, The Stephan Angeloff Institute of Microbiology (Bulgaria)

SESSION 5 LASER SYSTEMS AND NONLINEAR OPTICS

- 7747 13 **Directed photo-driven carrier, spin and phonon fluxes in polar layered heterostructure: photo-galvanic effects (Invited Paper)** [7747-65]
C. Flytzanis, Lab. Pierre Aigrain, CNRS, Ecole Normale Supérieure (France) and Max Born Institut für Nichtlineare Optik und Kurzzeitspektroskopie (Germany)
- 7747 14 **3D soliton-like bullets in nonlinear optics and Bose-Einstein condensates (Invited Paper)** [7747-21]
T. L. Belyaeva, Univ. Autónoma del Estado de México (Mexico); A. Hasegawa, Soliton Communications (Japan); L. M. Kovachev, Institute of Electronics (Bulgaria); V. N. Serkin, Institute of Electronics (Bulgaria) and Benemérita Univ. Autónoma de Puebla (Mexico)

- 7747 15 **Soliton-dispersive wave collisions in high average power supercontinuum generation (Invited Paper)** [7747-63]
B. H. Chapman, J. C. Travers, E. J. R. Kelleher, S. V. Popov, J. R. Taylor, Imperial College London (United Kingdom)
- 7747 16 **Functional nonlinear photonic crystals (Invited Paper)** [7747-78]
A. Ganany Padowicz, I. Dolev, T. Ellenbogen, A. Arie, Tel-Aviv Univ. (Israel)
- 7747 17 **Diode edge-pumped Yb:YAG disk laser (Best Student Paper Award)** [7747-39]
A. Khayat Jafari, M. R. Jafari Milani, H. Aminpour, I. Mashaieky Asl, J. Sabbaghzadeh, Iranian National Ctr. for Laser Science and Technology (Iran, Islamic Republic of)
- 7747 18 **Calculating optical path difference in end-pumped Yb:YAG thin disk lasers** [7747-36]
M. R. Jafari Milani, V. Sazegari, A. Khayat Jafari, Iranian National Ctr. for Laser Science and Technology (Iran, Islamic Republic of)
- 7747 19 **Thermal stress effects in pulsed pump solid state lasers with super-Gaussian profile** [7747-26]
A. Keshavarz, P. Elahi, Shiraz Univ. of Technology (Iran, Islamic Republic of); S. Rezazadeh, Islamic Azad Univ. (Iran, Islamic Republic of)
- 7747 1A **Temperature distribution and thermal lensing in a flash lamp pumped Nd:YAG laser** [7747-27]
A. Keshavarz, G. Honarasa, T. Alamfard, Islamic Azad Univ. (Iran, Islamic Republic of) and Shiraz Univ. of Technology (Iran, Islamic Republic of)
- 7747 1B **Three-dimensional solutions of a vector type NLS equation with spatial dependence of the nonlinear refractive index** [7747-32]
P. Kancheva, A. Dakova, D. Dakova, The Paissi Hilendarski Univ. of Plovdiv (Bulgaria); V. Slavchev, Institute of Electronics (Bulgaria); L. Pavlov, South-Western Univ. (Bulgaria)
- 7747 1C **Nonlinear regime of propagation of three-dimensional optical pulses with large spectral bandwidth (Best Student Paper Award)** [7747-33]
D. I. Dakova, A. M. Dakova, The Paissi Hilendarski Univ. of Plovdiv (Bulgaria)
- 7747 1D **Optimization of the Petzval objective with the various evolution strategies and the damped least squares** [7747-06]
D. Vasiljević, Univ. of Belgrade (Serbia); S. Ilić, Military Academy (Serbia)
- 7747 1E **Degenerate four-wave mixing of optical vortices assisted by self-phase and cross-phase modulation** [7747-19]
G. Maleshkov, Sofia Univ. (Bulgaria); P. Hansinger, Friedrich-Schiller-Univ. (Germany); I. L. Garanovich, Australian National Univ. (Australia); D. Skryabin, Univ. of Bath (United Kingdom); D. N. Neshev, Australian National Univ. (Australia); A. Dreischuh, Sofia Univ. (Bulgaria); G. G. Paulus, Friedrich-Schiller-Univ. (Germany)
- 7747 1F **Diode end pumped Nd:YVO₄ laser passively Q-switched with Cr⁴⁺:YAG saturable absorber** [7747-02]
G. Honarasa, Shiraz Univ. of Technology (Iran, Islamic Republic of); A. Nofaresti, Malek-Ashtar Univ. of Technology (Iran, Islamic Republic of)

- 7747 1G **Hidden features of soliton adaptation law to external potentials: optical and matter-wave soliton bullets in nonautonomous and nonlinear systems** [7747-12]
C. Hernandez-Tenorio, Instituto Tecnológico de Toluca (Mexico); T. L. Belyaeva, Univ. Autónoma del Estado de México (Mexico); R. Perez-Torres, Univ. Tecnológico del Valle de Toluca (Mexico); L. M. Kovachev, Institute of Electronics (Bulgaria); V. N. Serkin, Institute of Electronics (Bulgaria) and Benemerita Univ. Autónoma de Puebla (Mexico)
- 7747 1H **Numerical study of axicon-based Bessel-Gauss resonator for thin disk laser** [7747-40]
R. Aghbolaghi, Iranian National Ctr. for Laser Science and Technology (Iran, Islamic Republic of) and Guilan Univ. (Iran, Islamic Republic of); J. Mollai, Iranian National Ctr. for Laser Science and Technology (Iran, Islamic Republic of); S. Batebi, Guilan Univ. (Iran, Islamic Republic of); A. Khayat Jafari, Iranian National Ctr. for Laser Science and Technology (Iran, Islamic Republic of)
- 7747 1I **New devices for applications in lasers and optical communications based on the wedged interference structures** [7747-53]
N. Mindizov, V. Pashova, M. Deneva, Technical Univ. of Sofia (Bulgaria); E. Stoykova, Institute of Optical Materials and Technologies (Bulgaria); M. Nenchev, Technical Univ. of Sofia (Bulgaria) and Institute of Electronics (Bulgaria)
- 7747 1J **Fabrication, substructure and properties of LiNbO₃ films** [7747-01]
V. Iyevlev, A. Kostyuchenko, Voronezh State Univ. (Russian Federation); M. Sumets, Voronezh State Architectural-Building Univ. (Russian Federation)
- 7747 1K **Tuning the pulse duration, spectral position, and bandwidth of femtosecond pulses by the beam's penetration in an intracavity prism (Best Student Paper Award)** [7747-54]
N. Dimitrov, I. Stefanov, A. Dreischuh, Sofia Univ. (Bulgaria)
- 7747 1L **Enhanced soliton spectral tunneling effect of self-compressing nonautonomous colored femtosecond solitons** [7747-11]
R. Perez-Torres, Univ. Tecnológico del Valle de Toluca (Mexico); T. L. Belyaeva, Univ. Autónoma del Estado de México (Mexico); C. Hernandez-Tenorio, Instituto Tecnológico de Toluca (Mexico); L. M. Kovachev, Institute of Electronics (Bulgaria); V. N. Serkin, Institute of Electronics (Bulgaria) and Benemerita Univ. Autónoma de Puebla (Mexico)
- 7747 1M **Influence of some gaseous additives on gas-discharge parameters and laser performance of a volume-scaled MIR He-SrBr₂ laser** [7747-08]
K. A. Temelkov, S. I. Slaveeva, Institute of Solid State Physics (Bulgaria); L. Lyutov, Univ. of Sofia (Bulgaria); N. K. Vuchkov, Institute of Solid State Physics (Bulgaria)
- 7747 1N **Enigmas of optical and matter-wave nonlinear soliton tunneling effects** [7747-09]
T. L. Belyaeva, Univ. Autónoma del Estado de México (Mexico); C. Hernandez-Tenorio, Instituto Tecnológico de Toluca (Mexico); R. Perez-Torres, Univ. Tecnológico del Valle de Toluca (Mexico); L. M. Kovachev, Institute of Electronics (Bulgaria); V. N. Serkin, Institute of Electronics (Bulgaria) and Benemerita Univ. Autónoma de Puebla (Mexico)
- 7747 1O **Dynamics of femtosecond optical pulses in linear medium with attenuation** [7747-44]
T. I. Pashova, V. I. Slavchev, The Paissi Hilendarski Univ. of Plovdiv (Bulgaria)

7747 1P **Fractional vortex dipoles of edge-screw type in self-focusing Kerr nonlinear media** [7747-20]
G. Maleshkov, Sofia Univ. (Bulgaria); P. Hansinger, Friedrich-Schiller-Univ. (Germany);
A. Dreischuh, Sofia Univ. (Bulgaria); G. G. Paulus, Friedrich-Schiller-Univ. (Germany)

Author Index

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Introduction

The International School on Quantum Electronics: Laser Physics and Applications (ISQE) has been organized biennially since 1978 by the Institute of Electronics of the Bulgarian Academy of Sciences. The School has already turned into a well-known forum, where both senior and young scientists can present and discuss the recent developments in the field of lasers and their applications in material processing, spectroscopy, non-linear optics, remote sensing, medicine and ecology.

The 16th International School on Quantum Electronics (ISQE 2010) took place from 20 to 24 September 2010 in Nessebar, Bulgaria. More than 80 scientists from 23 countries participated in this edition of the School and presented more than 100 contributions. A wide range of subjects reflecting the current trends in laser physics were discussed during the invited lectures and two poster sessions. ISQE 2010 was recognized as a high scientific level European conference and was financially supported by SPIE, the Optical Society of America, the European Physical Society, National Technical University of Athens (Greece) and Vivacom (Bulgaria), to which the organizing committee expresses deep gratitude. During the School a scientific exhibition was organized where leading companies in the domain of quantum electronics demonstrated their recent developments and presented scientific lectures. To encourage and acknowledge excellence in research and scientific presentation skills, SPIE and OSA sponsored the best student paper awards. In addition to the prizes, the winners were given also the opportunity to present their papers before the audience during a special oral session at the end of the School conference.

This Proceedings volume contains 60 invited and contributed papers covering the School topics of laser-matter interactions, laser spectroscopy and metrology, laser remote sensing and ecology, lasers in biology and medicine, and laser systems and nonlinear optics. All the submitted manuscripts were peer-reviewed by experts in the respective fields using the SPIE review process.

The editors of the volume would like to thank all the lecturers and participants for their contributions, as well as the reviewers for their time and effort and for their careful evaluation of the papers. We hope that the readers will find this collection of papers interesting and useful and we would like to invite them to take part in the next 17th ISQE, which will be held in 2012.

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