

PHOTONICA 09

International School and Conference on Photonics

24-28 August 2009
Belgrade, Serbia

ABSTRACTS OF PLENARY AND INVITED LECTURES AND CONTRIBUTED PAPERS

Editors
Brana Jelenković and Aleksandra Strinić

Institute of Physics
Belgrade, Serbia

Belgrade, 2009

BOOK OF ABSTRACTS

ABSTRACTS OF PLENARY AND INVITED LECTURES AND
CONTRIBUTED PAPERS
of the
International School and Conference on Photonics
PHOTONICA 09

24-28 August 2009
Belgrade, Serbia

Editors

Brana Jelenković
Aleksandra Strinić

Computer processing
Aleksandra Strinić

Publisher

Institute of Physics
Pregrevica 118, P.O. Box 68
11080 Belgrade, Serbia

Printed by
CENTURIO d.o.o.
Hilandarska 22, Belgrade

Number of copies

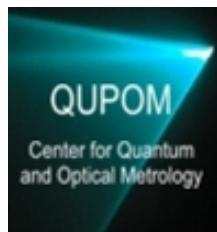
200

ISBN 978-86-82441-25-0

The PHOTONICA 09 (International School and Conference on Photonics) has been approved by the European Physical Society (EPS). The Conference was organized by the Institute of Physics, University of Belgrade (www.phy.bg.ac.yu), Faculty of Physics, University of Belgrade (www.ff.bg.ac.yu), "Vinča" Institute of Nuclear Sciences, University of Belgrade (www.vin.bg.ac.yu), Faculty of Electrical Engineering, University of Belgrade (www.etf.bg.ac.yu) and Institute of Chemistry, Technology and Metallurgy, University of Belgrade (www.ihtm.bg.ac.rs), under the auspices and with support of the **Ministry of Science and Technological Development, Serbia**.

The support of the sponsors of the Conference is greatly acknowledged:

1. MIT-Harvard Center for Ultracold Atoms
2. Multifunctional Nanomaterials Characterization
Exploiting EllipsoMetry and Polarimetry
3. FP6 INCO project QUPOM number 026322
4. European Physical Society
5. Office of Naval Research Global



Scientific Committee

Milivoj Belić, Qatar
Ian Bennion, United Kingdom
Nikola Burić, Serbia
Stefka Cartaleva, Bulgaria
Zorana Dohčević-Mitrović, Serbia
Paul Harrison, United Kingdom
Ljupčo Hadžievski, Serbia
Kurt Hingerl, Austria
Dragan Indjin, United Kingdom
Brana Jelenković, Serbia
Nikola Konjević, Serbia
Aleksandra Maluckov, Serbia
Gaetano Miletí, Switzerland
Dejan Milosevic, Bosnia and Herzegovina
Goran Pichler, Croatia
Zoran Popović, Serbia
Jelena Radovanović, Serbia
Vladimir Škarka, France
Maja Šćepanović, Serbia
Slobodan Vuković, Serbia
Arlene D. Wilson-Gordon, Israel
Laurentius Windholz, Austria

Organizing Committee

Brana Jelenković (Chair)
Radoš Gajić
Mirjana Grujić-Brojčin
Dejan Pantelić
Zoran Grujić (Webmaster)
Aleksandra Strinić (Secretary)
Ljupčo Hadžijevski
Milan Trtica
Biljana Gaković
Jelena Radovanović
Milan Tadić
Dejan Gvozdić
Milorad Kurajica
Ljubiša Zeković
Zoran Jakšić
Marina Mijailović
Sanja Ćirković

Conference topics

1. Optical materials
2. Metamaterials
3. Photonic crystals
4. Plasmonics
5. Quantum optics
6. Quantum informatics
7. Ultracold systems
8. Nonlinear optics
9. Lasers, laser spectroscopy
10. Biophysics
11. Optoelectronics and optocommunications
12. Holography

Preface

This book contains contributions to the 2nd International school and conference on photonics, PHOTONICA'09. The meeting features plenary and invited lectures and poster presentations in 10 different topics. During morning sessions ten plenary speakers will give lectures to the benefits of students and young researches. Twenty two invited lectures during afternoon sessions will present most resent results in their research fields. There are two poster sessions, late afternoon on Tuesday and Thursday, for students and young researchers to present their new results.

PHOTONICA'09 is organized by Institute of Physics, Faculty of physics, VINCA Institute of nuclear sciences, Faculty of Electrical Engineering, and Institute of Chemistry, Technology and Metallurgy IHTM, all members of the University of Belgrade. Organizers hope that PHOTONICA'09 will promote and disseminate knowledge of modern and multidisciplinary field of photonics among researchers and students, particularly those working and studding in the South-East region of Europe.

August 2009

Brana Jelenković
PHOTONICA 09 Organizing Committee

Table of Contents

Plenary and Invited lectures

Transformation of optical beams using nonlinear photonic crystals <i>T. Ellenbogen, I. Dolev, N. Voloch-Bloch, A. Ganany-Padowicz and A. Arie</i>	3
Optical properties of nitride nanostructures <i>A. Cantarero, A. Cros, A. Garcíá-Cristóbal, and N. Garro</i>	4
Optical waveguides in rare-earth ion doped lithium niobate crystals produced by ion implantation: a recent overview <i>F. Chen and D. Jaque</i>	5
3D structures created inside photo-refractive crystals by tightly focused single femtosecond pulses <i>Eugene G. Gamaly</i>	6
Bose Gas in Flatland <i>Zoran Hadžibabić</i>	7
A 2D Model for the FDTD Simulation of Split Ring based Metamaterials <i>Ulrich Dobramysl and Kurt Hingerl</i>	8
Semiconductor cavity quantum electrodynamics with single quantum dots <i>Sven Höfling, S. Reitzenstein, C. Schneider, T. Sünder, T. Heindel, C. Kistner, P. Weinmann, A. Huggenberger, M. Kamp, and A. Forchel</i>	9
Optical label-free biosensors: principles and applications <i>Jiri Homola</i>	10
Doing photonics with Dirac fermions in graphene <i>Dmitri Khveshchenko</i>	11
Spatial nonlinear optics in periodic lattices in lithium niobate <i>Detlef Kip</i>	12

Dynamical Symmetry Breaking in Dual-Core Nonlinear Systems <i>Boris Malomed</i>	13
Photonic Crystals: Properties and Applications <i>Ronald Meisels</i>	14
 <i>Vladimir Mezencev</i>	15
Cavity optomechanics <i>Pierre Meystre</i>	16
Biomimetic nanostructured thin layers synthesized by advanced pulsed laser technologies for mineralized tissues, fast repairing and regeneration <i>Ion N. Mihailescu</i>	17
Ultracold Molecules <i>Jovana Petrović</i>	18
Overcoming Parametric Stochastic Barrier <i>Stojan Radić</i>	19
Cold atom ratchets: beyond 1D rocking ratchets <i>Ferruccio Renzoni</i>	20
Nonlinear metamaterials <i>Ilya V. Shadrivov</i>	21
Quantum cascade lasers with improved thermal properties and their application in optoacoustic sensors <i>Vincenzo Spagnolo</i>	22
 <i>Jonhatan Spanier</i>	23
Quantum control of linear susceptibility in five-level atoms via dressed interacting ground states, with a focus on group velocity control <i>Christopher P. Search</i>	24
Optical capability of runaway electron preionized diffuse discharges and its applications for excilamps and lasers <i>Victor F. Tarasenko</i>	25

Photonic crystals as new materials for dynamic holography <i>Nikolay Tcherniega</i>	26
Actual and next generation access photonic networks <i>Antonio Teixeira</i>	27
Quantum dots as detectors and sources of mid- and far-infrared radiation: theoretical models <i>Nenad Vukmirović, D. Indjin, Z. Ikonić and P. Harrison</i>	28
Storing classical and non-classical light in atomic media <i>Haruka Tanji, Jonathan Simon, Saikat Ghosh, and Vladan Vuletic</i>	29
Experimental quantum state engineering using linear optics and parametric down-conversion <i>Philip Walther</i>	30
Quantum transport of atoms in Fourier-synthesized optical lattices <i>Martin Weitz</i>	31
 <i>Anatoly V. Zayats</i>	32

Contributed papers

Poster session TUESDAY

Topic: Quantum Optics

TU_1	Perturbative solution of optical Bloch equations for analysis of electromagnetically induced absorption <i>Jelena Dimitrijević, Dušan Arsenović and Branislav M. Jelenković</i>	35
TU_2	Photon's Structure of Motion <i>N.V. Delić, B.S. Tošić, J.P. Šetračić, B. Markoski, S.S. Pelemiš</i>	36
TU_3	Analysis of shot noise correlations and entanglement in a double quantum dot system coupled to a quantized bosonic field <i>M. Živković, I. Djurić and C. P. Search</i>	37

TU_4	Nuclear quantum optics: DC, AC Stark effect in atoms and nuclei and dynamics with intense laser pulses <i>A.V. Glushkov</i>	38
TU_5	On treating atomic parity non-conservation in heavy atoms and observing P and PT violation using NMR shift in a laser beam <i>O.Yu. Khetselius</i>	39
TU_6	Transient Dynamics of Atoms in rectangular cylindric guides <i>Smail Bougouffa and Saud Al-Awfi</i>	40
TU_7	Stark-chirped rapid adiabatic passage in a multilevel atom <i>M. Radonjić, D. Arsenović and B. M. Jelenković</i>	41
TU_8	Coherent beam splitting by thin gratings and crystal plates <i>M. Božić, D. Dimić and M. Davidović</i>	42
TU_9	Geometric phase of an open quantum system <i>N. Burić and M. Radonjić</i>	43
TU_10	Interplays between Josephson-junctions and the driven damped pendulum <i>E. Papp, C. Micu and I. Bica</i>	44
TU_11	Analysis of high efficiency Electromagnetically Induced Transparency in Potassium vapor <i>S. Gozzini, D. Slavov, S. Cartaleva, L. Marmugi, A. Lucchesini</i>	45
TU_12	Coherent Population Trapping on the second resonance line of potassium <i>S. Gozzini, S. Cartaleva, T. Karaulanov, A. Lucchesini, D. Slavov</i>	46
TU_13	Population loss in closed optical transitions of alkali atoms confined in micrometric thin cells <i>V. Biancalana, S. Cartaleva, Y. Dancheva, P. Gosh , E. Mariotti, L. Moi, N. Petrov, B. Ray, D. Sarkisyan, D. Slavov</i>	47
TU_14	All-optical polarization switch – Competition of to quantum-coherence phenomena <i>S. Pustelnik, R. Drampyan, W. Gawlik</i>	48

Topic: Nonlinear Optics

TU_15	Invisibility in low dimensional systems: a theoretical framework <i>V. Čelebonović</i>	49
TU_16	Parametric amplification of light waves at low-frequency pumping in aperiodical nonlinear photonic crystals <i>I.V. Shutov and A.S. Chirkin</i>	50
TU_17	Asymmetric Second Harmonic Generation from Gold Nanostructures of Ancient Greek Design <i>V. K. Valev, A. V. Silhanek, W. Gillijns, O. A. Aktsipetrov, V. V. Moshchalkov and T. Verbiest</i>	51
TU_18	Super intense laser field action on surface with forming atto-second laser plasma and new laser technology for cleaning the materials <i>A. V. Glushkov, A.P. Fedchuk, A.V. Loboda, A.A. Svinarenko</i>	52
TU_19	Mechanoluminescence Due to Fracture Produced during Slow Deformation of solids <i>R. K. Kuraria, S. R. Kuraria, Neha Chourasia and B. P. Chandra</i>	53
TU_20	Bleaching and darkening effect in photochromic glasses under irradiation with femtosecond laser pulses <i>Kazem Jamshidi-Ghaleh</i>	54
TU_21	Numerical solution of nonlinear Helmholtz equations for counterpropagating wide beams in saturable photorefractive crystals <i>A. Piper, N.B. Aleksic, M.R. Belic and D.V. Timotijevic</i>	55
TU_22	Numerical method for solving scalar nonlinear Schrödinger equation with periodically varying coefficients <i>A. Piper, N.B. Aleksic, M.R. Belic and D.V. Timotijevic</i>	56
TU_23	Gap solitons in binary waveguide arrays with saturable nonlinearity <i>P. P. Belićev, M. Stepić and A. Maluckov</i>	57

TU_24	Strongly localized bright-dark structures in nonlinear fiber arrays with alternating dispersion <i>A. Daničić, A. Maluckov and M. Stepić</i>	58
TU_25	Calculating ionization transition rate for circularly polarized fields, including non-zero initial momenta, in the case of ADK-theory <i>V. M. Ristić, T. B. Miladinović and M. M. Radulović</i>	59
TU_26	Counterpropagating matter waves in optical lattices <i>S. Prvanovic, D. Jović, R. Jovanovic, A. Strinic and M. Belić</i>	60
TU_27	Solitons in nematics liquid crystals <i>S. Prvanovic, D. Jović, R. Jovanovic, A. Strinic and M. Belić</i>	61
TU_28	Spin precession of quasi-bound states in heterostructures with spin-orbit interaction <i>G. Isić, D. Indjin, Z. Ikonić, V. Milanović, J. Radovanović and P. Harrison</i>	62
TU_29	About the origin of enhancements in high-order above-threshold ionization of atoms and negative ions <i>S. Vučić and R. M. Potvliege</i>	63
TU_30	Atoms and molecules in a strong laser field <i>M. Busuladžić, A. Gazibegović-Busuladžić, E. Hasović, D. B. Miloševic and W. Becker</i>	64

Topic: Ultracold systems

TU_31	Analytic methods for approximating the quantum dynamics of cavity-assisted photoassociation of atom-molecule Bose-Einstein condensates <i>J. Mauricio Campuzano, Marko Zivkovic and Christopher P. Search</i>	65
TU_32	The affect of Sagnac rotational phase shifts on matter wave transmission in a chain of periodic and aperiodic mesoscopic quantum rings <i>J. Toland, D. Dayon and C. Search</i>	66

TU_33	Two-dimensional discrete fundamental bright solitons in dipolar Bose-Einstein condensates <i>G. Gligorić, A. Maluckov, M. Stepić, B. A. Malomed and Lj. Hadžievski</i>	67
TU_34	Modulation instability of two-dimensional dipolar BEC in a deep optical lattice <i>A. Wöllert, G. Gligorić, M. Škorić, A. Maluckov and Lj. Hadžievski</i>	68
TU_35	Ulraslow light phenomenon in a BEC: temperature effects and the dependence on the magnetic field intensity <i>A. Sotnikov and Yu. Slyusarenko</i>	69
TU_36	Two-Dimensional magneto-optical trap as source of cold Rb atomic beam <i>D.V. Lukić, B. Panić, M.Radonjić, S. Ćuk and B. Jelenković</i>	70

Topic: Laser and Laser Spectroscopy

TU_37	A strongly end-pumped Yb-doped double-clad fiber lasers: the improvement of the analytical solutions of rate equations and the analytical investigation of thermal effects during operation <i>P. Elahi and N. Zare</i>	71
TU_38	The analytical investigation of thermal effects on the propagation parameters of fiber lasers <i>Parviz Elahi and Ali Niakowsari</i>	72
TU_39	Blackbody-radiation-induced decay and excitation of Rydberg states in sodium <i>V. D. Ovsianikov and I. L. Glukhov</i>	73
TU_40	Excitations and decays of rubidium Rydberg states induced by blackbody radiation <i>I. L. Glukhov and V. V. Chernushkin</i>	74
TU_41	Photothermal spectra of inhomogeneous coatings <i>M. Popovic, S. Galovic, and Z. Stojanovic</i>	75
TU_42	Comparative study between energy levels of Co^{2+} and Cr^{3+} ions doped in MgF_2 crystal <i>Ramona Nistoră, Laura Andreici and N.M. Avram</i>	76

TU_43	Exchange Charge Model for Fe ³⁺ : LiAl ₅ O ₈ <i>Vaida Mirela, C.N. Avram</i>	77
TU_44	Crystal field analysis of Cr ³⁺ doped SrAl ₂ O ₄ spinel <i>M.L. Stanciu, M.G. Ciresan, N. M. Avram</i>	78
TU_45	Calculation of optical and spin-Hamiltonian parameters for Mn ⁴⁺ doped in LiGa ₅ O ₈ <i>M.G. Ciresan, M.L. Stanciu, N.M. Avram</i>	79
TU_46	Thermal issue management in rare-earth doped Near Infrared lasers <i>B. Viana, P. O. Petit, Ph. Goldner, F. Balembois, F. Druon, P. Georges</i>	80
TU_47	Microstructure changes of iron-base superalloys induced by interaction with femtosecond laser beam <i>S. Petronic, S. Drecun-Nesic, A. Milosavljevic, A. Sedmak, M. Popovic and A. Kovacevic</i>	81
TU_48	Fine-scale structure investigation of Nimonic 263 superalloy surface damaged by femtosecond laser beam <i>A. Milosavljevic, S. Petronic, M. Sreckovic, A. Kovacevic, A. Krmpot and K. Kovacevic</i>	82
TU_49	Diffraction of Laguerre-Gaussian beam by a helical axicon <i>S. Topuzoski, Lj. Janicijevic</i>	83
TU_50	Analysis of temperature and density of Ar I for 4S'→4P' in a Facing Target Sputtering System <i>Y. Yasuda, N. Nishimiya, Y. Hoshi and M. Suzuki</i>	84
TU_51	Quantum efficiency and UV performances of nanostructured Mg thin films on Cu substrates for photocathode applications <i>C. Ristoscu, F. Sima, I. N. Mihailescu, L. Cultrera, A. Perrone</i>	85
TU_52	Effect of doping with carbon and nitrogen on photocatalytic activity of TiO ₂ thin films synthesized by pulsed laser deposition <i>G. Socol, N. Stefan, I. N. Mihailescu, V. Djokic, D. Janackovic, C. Sutan, V. Malinovski, A. Moldovan</i>	86

TU_53	Carbon dioxide monitoring system by measuring area intensity of absorption spectrum <i>N. Nishimiya, Y. Yasuda, and M. Suzuki</i>	87
TU_54	Laser beam profile influence on Hanle CPT resonances in Rb vapour <i>A. J. Krmpot, S. Ćuk, S. N. Nikolić, M. Radonjić, Z. D. Grujić, and B. M. Jelenković</i>	88
TU_55	Simulation and computation of laser cavity using modern software tools <i>B. Djokic, M. Sreckovic, S. Ostojic and A. Kovacevic</i>	89
TU_56	Derivation of temperature distribution function in fibers laser with eccentric multi-end-pumping by using Green's function method <i>A. Gharaati and M. Jafari</i>	90
TU_57	Measurement of betanin fluorescence using TR-LIF technique <i>M. S. Rabasovic, D. Sevic, M. Terzic, S. Savic-Sevic, B. Muric, D. Pantelic, B. P. Marinkovic</i>	91
TU_58	Investigation of the fluorescence spectra of Cs-vapor layers with nano-metric thickness <i>K. Vaseva, P. Todorov, S. Cartaleva, D. Slavov, S. Saltiel</i>	92
TU_59	Lensless ghost imaging with pseudo-thermal light <i>Nandan S. Bisht, Enakshi K. Sharma and H. C. Kandpal</i>	93

Poster session THURSDAY

Topic: Optical materials

THU_1	Study on formation and nonlinear optical properties of noble metal nanoparticles embedded in silica glass investigated by Z-scan technique <i>K. Dzierzega, M. Grabiec</i>	97
THU_2	High Power UV and VUV excilamps and they applications <i>V. Tarasenko, S. Avdeev, M. Erofeev, M. Lomaev, E. Sosnin, V. Skakun, D. Shitz</i>	98

THU_3	Spectra of Cr ³⁺ eightfold coordinated in MeF ₂ (Me=Ca, Cd, Sr, Ba) <i>N.M. Avram, A.E.Nikiforov ,V.A.Chernyshev, C.N.Avram, M.Vaida, R.Nistora</i>	99
THU_4	Lithium niobate crystals doped with iron by thermal diffusion: relation between lattice deformation and reduction degree <i>M.V. Ciampolillo, A.M. Zaltron, N. Argiolas, M. Bazzan, C. Sada</i>	100
THU_5	IC Resonant Absorption in Molecular Nanofilms <i>S.S. Pelemiš, J.P. Šetrajčić, B. Markoski, N.V. Delić, S.M. Vučenović, D.Lj. Mirjanić</i>	101
THU_6	Dispersion properties of optical polymers <i>N. Sultanova, S. Kasarova and I. Nikolov</i>	102
THU_7	Nonlinear Responses and Optical Properties Modification of SK3 under Irradiation of Femtosecond Laser Pulses <i>Kazem Jamshidi-Ghaleh, Hosain Masalehdan</i>	103
THU_8	Aberrations of betanin sensitized gelatin microlenses <i>D. Vasiljević, B. Murić, D. Pantelić, B. Panić</i>	104
THU_9	Field induced singlet exciton dissociation and exciton-exciton annihilation in MEH-PPV films studied by photocurrent spectra <i>J. Petrović, P. Matavul^l L. Pinto and S. Živanović Šelmić</i>	105
THU_10	Multi-color emission in quantum-dot-quantum-well semiconductor heteronanoocrystals <i>R. Kostić and D. Stojanović</i>	106
THU_11	Optical characterization of laser-synthesized anatase TiO ₂ nanopowders by spectroscopic ellipsometry and photoluminescence measurements <i>M. Šćepanović, M. Mirić, M. Grujić-Brojčin, Z. Dohčević-Mitrović, and Z. V. Popović</i>	107
THU_12	The patterns of the optical excitonic effect in type-I nanorings <i>M. Tadić,^l V. Arsofski,^l N. Čukarić,^l and F. M. Peeters</i>	108

THU_13	Engineering and advanced digitalization of photonic structures with bound field in the continuum <i>N. Prodanović, V. Milanović and J. Radovanović</i>	109
THU_14	Surface modification of metallic targets with ultrashort laser pulses <i>B. Gakovic, J. Stasic, S. Petrovic^l, B. Radak, A. Krmpot, B. Jelenkovic, M. Trtica</i>	110
THU_15	Hydrothermal synthesis of CeO ₂ and Ce _{0.9} Fe _{0.1} O ₂ nanocrystals <i>M. Radović, Z. D. Dohčević-Mitrović, A. Golubović, B. Matović, M. Šćepanović and Z. V. Popović</i>	111
THU_16	Laser interaction with material – theory, experiments and discrepancies <i>M. Sreckovic, J. Ilic, M. Davidovic, B. Djokic, Z. Tomic, Z. Latinovic, D. Druzijanic</i>	112
THU_17	Optical properties of Y ₂ O ₃ : Eu ³⁺ red emitting phosphor obtained via spray pyrolysis <i>Ž. Antić, R. Krsmanović, V. Đorđević, T. Dramičanin and Miroslav. D. Dramičanin</i>	113
THU_18	High pressure optical studies of α-ZnAl ₂ S ₄ :Cr ³⁺ <i>B. R. Jovanić, I. Broussell, B. Panić, B. Radenković, M. Despotović</i>	114

Topic: Metamaterials

THU_19	Fishnet-based metamaterials: spectral tuning through adsorption mechanism <i>Z. Jakšić, D. Tanasković and J. Matović</i>	115
THU_20	Vacuum fluctuations in optical metamaterials containing nonlinear dielectrics <i>Z. Jakšić, S. Ostojić, D. Tanasković and J. Matović</i>	116
THU_21	Modelling the variable angle reection and transmission from metamaterial slabs <i>G. Isić, B. Vasić, M. Mirić, B. Jokanović, I. Bergmair, R. Gajić and K. Hingerl</i>	117

THU_22	Breather induction by modulational instability in binary metamaterials <i>N. Lazarides, M. I. Molina and G. P. Tsironis</i>	118
THU_23	Influence of Goos-Hänchen shift on tunneling times in dispersive nonlinear media <i>L. Ilić, P.P. Belićev, V. Milanović, J. Radovanović and Lj. Hadžievski</i>	119
THU_24	Light scattering by a finite spherical particle <i>Igor Ilić and Nevena Raičević</i>	120

Topic: Photonic Crystals

THU_25	Surface roughness in 1D photonic crystals: theoretical and experimental study <i>O. Glushko, R. Meisels, F. Kuchar</i>	121
THU_26	Optimization of quantum well infrared photodetectors with embedded photonic crystals <i>O. Glushko, R. Meisels, S. Schartner, S. Kalchmair, G. Strasser</i>	122
THU_27	Optical properties of Archimedean photonic crystals <i>D. Jovanović, R. Gajić and K. Hingerl</i>	123
THU_28	Influence of the heat treatment duration on the band gaps in biopolymer photonic crystals <i>S. Savic Sevic, D. Pantelic and B. Jelenkovic</i>	124
THU_29	Application of Fourier-Pade approximation in analysis of holographic photonic crystal structures <i>D. Sevic, S. Savic-Sevic, D. Pantelic, B. Jelenkovic and B. P. Marinkovic</i>	125
THU_30	Spatial Frequency Combs and Supercontinuum Generation in 1D Photonic Lattices <i>R. Dong, C. E. Rüter, D. Kip, O. Manela, M. Segev, C. L. Yang, and J. J. Xu</i>	126

- THU_31 Optical Soliton Formation in one - dimensional Photonic Crystal with Cubic Nonlinear Response 127
V. Trofimov, T. Lysak, O. Matysevich, S. Lan

Topic: Optoelectronics and Optocommunications

- THU_32 Temperature dependence analysis of mode dispersion in step-index polymer optical fibers 128
M.S. Kovacevic and A. Djordjevich
- THU_33 Comparison of methods for calculating coupling length in step-index optical fibers 129
Svetislav Savović, Alexandar Djordjevich, Branko Drljača and Milan S. Kovačević
- THU_34 Equilibrium Mode Distribution and Steady State Distribution in Step-Index Glass Optical Fibers 130
S. Savović, A. Djordjevich, B. Drljača and A. Simović
- THU_35 Calculation of the Impulse Response of Step-Index Plastic Optical Fibers Using the Time-Dependent Power Flow Equation 131
B. Drljača, S. Savović and A. Djordjevich
- THU_36 Optical mini-disk resonator integrated into a compact optoelectronic oscillator 132
P. Salzenstein, H. Tavernier, K. Volyanskiy, N. N. T. Kim, P. Féron, L. Larger and E. Rubiola
- THU_37 Design and Modeling of Silicon-on-Insulator Strip Waveguides 133
P. Matavulj, D. Bradić, M. Milošević, and G. Z. Mashanovich
- THU_38 Side-mode suppression ratio in injection-locked Fabry-Perot lasers 134
M. Krstić and D.M. Gvozdić
- THU_39 Intersubband absorption in quantum dash nanostructures 135
J. V. Crnjanski and D. M. Gvozdić

THU_40	Mode analysis of optical waveguides using electromagnetic energy flow lines <i>Miloš Davidović and Milena Davidović</i>	136
THU_41	Time-frequency analysis of non-stationary optical signals using Husimi type function <i>Miloš Davidović and Milena Davidović</i>	137

Topic: Plasmonics

THU_42	Plasmonic Bragg Reflector and Tamm Plasmon Polaritons in Metal-dielectric Superlattices <i>S. Vukovic</i>	138
--------	--	-----

Topic: Biophysics

THU_43	Measurement of small variations in optical properties of turbid ingredients with respect to surrounded turbid medium <i>I. Bliznakova, O. Vankov, T. Dreischuh and D. Stoyanov</i>	139
THU_44	Long-range correlation in atomic vibrations of chicken lysozyme backbone <i>D. Crăciun, A. Isvoran, and N. M. Avram</i>	140
THU_45	Challenges in imaging skin using optical coherence tomography <i>N. Krstajić, L. E. Smith, S. J. Matcher, D. T. D. Childs, M. Bonesi, P.D.L. Greenwood, M. Hugues, K. Kennedy, M. Hopkinson, K.M. Groom, S. Macneil, R. A. Hogg, R. Smallwood</i>	141
THU_46	An ellipsometrical and AFM study of ferritin adsorption kinetics on a gold surface <i>L. Vladimirova, A. Andreeva, V. Savov, A. Gritzkow, M. Burova</i>	142
THU_47	Biopolymer-calcium phosphate composites synthesized by pulsed laser technologies for medical applications <i>F. Sima, E. Axente, N. Serban, C. Ristoscu, I. N. Mihailescu, K. Anselme, E. Pauthe, O. Gallet</i>	143

THU_48	Interpretation of fluorescence decay kinetics in oligonucleotides using a heterogeneity model of lifetime distribution based on long-range photoinduced electron transfer <i>Borys Kierdaszuk</i>	144
THU_49	Optical and mass-spectrometric study of the slow electrons interaction with nucleic acid components <i>M. I. Shafranyosh, M. I. Sukhoviya, I. I. Shafranyosh</i>	145
THU_50	Optical biopsy method for breast cancer diagnosis based on artificial neural network classification of fluorescence landscape data <i>T. Dramičanin, I. Zeković, B. Dimitrijević, S. Ribar and M.D. Dramičanin</i>	146
THU_51	Optical Properties of Acupuncture Points as diagnostic method <i>B. R. Jovanić, D. Nikolovski, B. Radenković and M. Despotović</i>	147
THU_52	Correlation between physical and anthropometric characteristics of junior football players <i>A. Ciorsac, D. Craciun, A. Isvoran, V. Ostafe</i>	148

Author INDEX 149