



14-16 September, 2022  
Ashtarak, Armenia



International Conference

## Laser Physics 2022

# PROGRAM



Ministry of Education, Science,  
Culture and Sports RA  
Science Committee

**OPTICA** | Formerly  
OSA  
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# Laser Physics 2022

## TOPICS

- ◆ Lasers, New Laser Technologies and Applications
- ◆ Optical and Scintillating Materials, Characterization Methods and Techniques
- ◆ Light-Matter Interaction, Including Resonant Interaction with Atoms
- ◆ Laser-Assisted Surface Effects
- ◆ Nonlinear Optics and Novel Phenomena
- ◆ Laser Spectroscopy, Ultrafast Phenomena and Mathematical Modelling
- ◆ Physical Optics, Atomic Physics, Singular Optics
- ◆ Optical Magnetometry
- ◆ Quantum Optics and Matter Waves
- ◆ Quantum Information
- ◆ Optical Properties of Structured Media, Micro and Nano-Optics
- ◆ Optoelectronics
- ◆ Photonics, Photonic Systems, Biophotonics
- ◆ Optical Sensors
- ◆ Graphene for Photonics
- ◆ Holography and Imaging

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Ministry of Education, Science,  
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International Conference

# Laser Physics 2022

14-16 September, 2022

PROGRAM

Wednesday, September 14, 2022

**Registration of Participants 9:00 - 10:00; 13:00 - 14:00**

Opening ceremony 10:00 – 10:20	
10:00 – 10:10	<b>Conference Opening: Welcome speech</b> <b>Aram Papoyan</b> <i>Director of the Institute for Physical Research, NAS of Armenia</i>
10:10 – 10:20	<b>Welcome and overview</b> <b>Rafael Drampyan</b> <i>Chairman of the Conference, Institute for Physical Research, NAS of Armenia</i>

Morning Session. 10:20 - 13:20 Chairmen: Aram Papoyan, David Sarkisyan,	
10:20 – 11:00	<b>Plenary report</b> <b>Massive matter-wave interferometers on the atom chip with nano-diamonds: a roadmap</b> <b>R. Folman</b> <i>Ben-Gurion University of the Negev, Beer Sheva, Israel</i>
11:00- 11:30	<b>Invited report</b> <b>A new level-crossing two-state model solvable in terms of hypergeometric functions</b> <b>T. A. Shahverdyan, T. A. Ishkhanyan, and A. M. Ishkhanyan</b> <i>Institute for Physical Research, NAS of Armenia</i>
11:30- 11:50	<b>Coffee break</b> ☕
11:50 – 12:20	<b>Invited report</b> <b>The gauge degrees of freedom in the theory of massless spin 2 particle, solutions with spherical symmetry</b> <b>A. V. Bury<sup>1</sup>, A. V. Ivashkevich<sup>1</sup>, A. V. Chichurin<sup>2</sup>, V. M. Red'kov<sup>1,g</sup></b> <sup>1</sup> <i>B.I. Stepanov Institute of Physics, Minsk, Republic of Belarus</i>

	<sup>2</sup> Institute of Mathematics and Computer Science, The John Paul II Catholic University of Lublin, Lublin, Poland
12:20 – 12:50	<p><b>Invited report</b></p> <p><b>Electromagnetically Induced Transparency Effect Using Magnetically Induced Transitions: Circular Dichroism Manifestation</b></p> <p><b><u>D. Sarkisyan</u>, A. Tonoyan, and A. Sargsyan</b></p> <p><i>Institute for Physical Research, NAS of Armenia</i></p>
12:50 – 13:20	<p><b>Invited report</b></p> <p><b>Spectral and tuning characteristics of extended cavity diode lasers</b></p> <p><b>A. P. Bogatov<sup>1</sup>, A. E. Drakin<sup>1</sup>, D. S. Chuchelov<sup>1</sup>, E. A. Tsygankov<sup>1</sup>, V. V. Vassiliev<sup>1</sup>, M. I. Vaskovskaya<sup>1</sup>, <u>V. L. Velichansky</u><sup>1,2</sup>, S. A. Zibrov<sup>1</sup>.</b></p> <p><sup>1</sup> <i>P. N. Lebedev Physical Institute, Russian Academy of Sciences, Moscow, Russia</i></p> <p><sup>2</sup> <i>National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia</i></p>
13:20 – 14:30	<p><b>Lunch</b> </p>

<b>Afternoon Session. 14:30 - 18:00</b>	
<b>Chairmen: Vartkess Ara Apkarian, Rafael Drampyan</b>	
14:30 – 15:00	<p><b>Invited report</b></p> <p><b>Femtosecond lasers in ophthalmology: Finite element modeling of glaucoma surgery</b></p> <p><b><u>G. P. Djotyan</u><sup>1,2</sup>, E. R. Mikula<sup>2,3</sup>, K. Kranitz<sup>4</sup>, Z. Nagy<sup>4</sup>, T. Juhasz<sup>2,3</sup></b></p> <p><sup>1</sup> <i>Wigner Res. Centre for Phys., Budapest, Hungary</i></p> <p><sup>2</sup> <i>Dep. of Ophthalmol., Univ. of California, Irvine, CA, USA</i></p> <p><sup>3</sup> <i>ViaLase Inc., Aliso Viejo, CA, USA</i></p> <p><sup>4</sup> <i>Dep. of Ophthalmol., Semmelweis Univer., Budapest, Hungary</i></p>
15:00 – 15:30	<p><b>Invited report</b></p> <p><b>Bessel Beam Assisted Photovoltaic Trapping of Micro/nano-objects on a Lithium Niobate Crystal</b></p> <p><b>L. Tsarukyan<sup>1</sup>, A. Badalyan<sup>1</sup>, L. Aloyan<sup>2</sup>, Y. Dalyan<sup>2</sup>, <u>R. Drampyan</u><sup>1</sup></b></p> <p><sup>1</sup> <i>Institute for Physical Research, NAS of Armenia</i></p> <p><sup>2</sup> <i>Yerevan State University, Yerevan, Armenia</i></p>
15:30 – 16:00	<b>Invited report</b>

	<b>Magneto Plasmon Spectrum in Graphene</b> <b>A. M. Ishkhanyan<sup>1,2</sup>, V. P. Krainov<sup>3</sup></b> <sup>1</sup> <i>Russian-Armenian University, Armenia</i> <sup>2</sup> <i>Institute for Physical Research of NAN Armenia</i> <sup>3</sup> <i>Moscow Institute of Physics and Technology (National Research University), Russia</i>
16:00 -16:20	<b>Coffee break</b> ☕
16:20 – 16:40	<b>Simulating Universal Gaussian Circuits with Linear Optics</b> <b>L. Chakhmakhchyan<sup>1,2</sup>, N. J. Cerf<sup>1</sup></b> <sup>1</sup> <i>Centre for Quantum Information and Communication, Ecole polytechnique de Bruxelles, Université libre de Bruxelles, Brussels, Belgium</i> <sup>2</sup> <i>Krisp, Yerevan, Armenia</i>
16:40 – 17:10	<b>Invited report</b> <b>MacColl-Hartman Paradox Interpretation: a Challenge to the Wave Equation</b> <b>A. Zh. Muradyan</b> <i>Institute of Physics, Yerevan State University, Armenia</i>
17:10 – 17:30	<b>Shallow donors in gapped graphene systems</b> <b>A. P. Djotyan, A. A. Avetisyan</b> <i>Department of Physics, Yerevan State University, Armenia</i>
17:30 – 17:50	<b>On the Method and Results of Calculation of the Tetrahedral Splittings and Resonance Interactions in Vibrational Spectra of High Symmetry Molecules</b> <b>E. S. Bekhtereva, O. N. Ulenikov, O. V. Gromova, N. I. Nikolaeva</b> <i>Research School of High-Energy Physics, National Research Tomsk Polytechnic University, Tomsk, Russia</i>
18:00	<b>Bus to Yerevan</b>

Thursday, September 15, 2022

<b>Morning Session 10:00 – 13:00</b>
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<b>Chairmen: Claude Leroy, Nelson Tabiryan</b>
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	<b>Plenary report (online)</b>  <b>Recent progress in the development of electrically controllable lenses and their applications</b>  <b>Z. Zemska<sup>1</sup>, P. Larochelle<sup>1</sup>, T. Galstian<sup>1,2,3</sup></b> <sup>1</sup> Université Laval, Québec, QC, Canada. <sup>2</sup> PATQER photonique inc. <sup>3</sup> TLCL Optical Research or LensVector inc.
10:00 – 10:40	<b>Invited report</b>  <b>Atomic Limit in Optical Microscopy &amp; Photon Confinement: Tip-Enhanced Raman Scattering in the Atomistic Near-field</b>  <b>V.A. Apkarian</b>  <i>Department of Chemistry, University of California at Irvine, USA</i>
11:10 – 11:30	<b>Generation of two entangled photons during the decay of a single photon in an optical fiber with random boundaries</b>  <b>A. S. Gevorkyan<sup>1,2</sup></b> <sup>1</sup> Institute for Informatics and Automation Problems, NAS of RA <sup>2</sup> Institute of Chemical Physics, NAS of RA
11:30 – 11:50	<b>Coffee break</b> ☕
11:50 – 12:10	<b>High Resolution Ro–Vibrational Analysis of Molecules in Doublet Electronic States: the <math>v_1+v_3</math> Band of Chlorine Dioxide (<math>^{16}\text{O}^{35}\text{Cl}^{16}\text{O}</math>) in the <math>\text{X}^2\text{B}_1</math> Electronic Ground State</b>  <b>O. N. Ulenikov<sup>1</sup>, E. S. Bekhtereva<sup>1</sup>, O. V. Gromova<sup>1</sup>, S. Bauerecker<sup>2</sup></b> <sup>1</sup> Research School of High-Energy Physics, National Research Tomsk Polytechnic University, Tomsk, Russia <sup>2</sup> Institut für Physikalische und Theoretische Chemie, Technische Universität Braunschweig, Germany
12:10 – 12:30	<b>Atom-surface interaction in a Potassium nanocell</b>  <b>A. Sargsyan, D. Sarkisyan</b>  <i>Institute for Physical Research, NAS of Armenia</i>
12:30 – 13:00	<b>Invited report</b>  <b>Preparation and study of Graphene/LN heterojunction for sensorial application</b>  <b>E. Kokanyan<sup>1,2</sup>, N. Margaryan<sup>3</sup>, N. Gasparyan<sup>3</sup>, N. Babajanyan<sup>1</sup></b>

	<sup>1</sup> <i>Armenian State Pedagogical University after Kh.Abovyan, Yerevan, Armenia</i> <sup>2</sup> <i>Institute for Physical Research, NAS of Armenia</i> <sup>3</sup> <i>A. Alikhanyan National Science Laboratory (Yerevan Physics Institute), Yerevan, Armenia</i>
13:00 – 14:10	<b>Lunch</b> 

## Afternoon Session 14:10 – 18:10

**Chairmen Vladimir Velichansky, Vladimir Krainov**

14:10 – 14:40	<b>Invited report</b> <b>Electromagnetically Induced Absorption Resonances in Alkali-Metal Vapor Cells for Applications in Quantum Metrology</b> <b>D. V. Brazhnikov<sup>1,2</sup>, V. I. Vishnyakov<sup>1</sup>, S. M. Ignatovich<sup>1</sup>, M. N. Skvortsov<sup>1</sup></b> <sup>1</sup> <i>Institute of Laser Physics SB RAS, Novosibirsk, Russia</i> <sup>2</sup> <i>Novosibirsk State University, Novosibirsk, Russia</i>
14:40 – 15:00	<b>Expanded Ro–Vibrational Analysis of the Dyad Region of <sup>12</sup>CD<sub>4</sub> and <sup>13</sup>CD<sub>4</sub>: Line Positions, Energy Levels, and Absolute Line Strengths</b> <b>O. V. Gromova<sup>1</sup>, O. N. Ulenikov<sup>1</sup>, E. S. Bektereva<sup>1</sup>, S. Bauerecker<sup>2</sup></b> <sup>1</sup> <i>Research School of High-Energy Physics, National Research Tomsk Polytechnic University, Lenin av., 30, 634050, Tomsk, Russia</i> <sup>2</sup> <i>Institut für Physikalische und Theoretische Chemie, Technische Universität Braunschweig, D-38106, Braunschweig, Germany</i>
15:00 – 15:30	<b>Invited report</b> <b>Simulation of Terahertz Radiation Generation by Femtosecond Pulses Propagating in Nanocomposites with Semiconductor Quantum Dots</b> <b>O. Fedotova<sup>1</sup>, A. Husakou<sup>2</sup>, R. Rusetski<sup>1</sup>, O. Khasanov<sup>1</sup>, A. Fedotov<sup>3</sup>, T. Smirnova<sup>4</sup>, U. Sapaev<sup>5</sup>, P. Klenovsky<sup>6,7</sup>, and I. Babushkin<sup>8,9,2</sup></b> <sup>1</sup> <i>SPMRC of NASB, Minsk, Belarus</i> <sup>2</sup> <i>Max Born Institute, Berlin, Germany</i> <sup>3</sup> <i>Belarusian State University, Minsk, Belarus</i> <sup>4</sup> <i>ISEI BSU, Minsk, Belarus</i> <sup>5</sup> <i>TSTU, st. University 2, Tashkent, Uzbekistan</i>

	<p><sup>6</sup><i>Masaryk University, Brno, Czech Republic</i>  <sup>7</sup><i>Czech Metrology Institute, Brno, Czech Republic</i>  <sup>8</sup><i>IQO, Leibnitz Hannover University, Hannover, Germany</i>  <sup>9</sup><i>Cluster of Excellence PhoenixD, Hannover, Germany</i></p>
15:30 – 15:50	<p><b>Plasmonic nanostructures with laser induced chirality</b>  <b><u>L. A. Gladskikh, D. R. Dadadzhanov, A. Sapunova G. Alexan, R. A. Zakoldaev, T. A. Vartanyan</u></b>  <i>ITMO University, St. Petersburg, Russia</i></p>
15:50 – 16:10	<b>Coffee break</b> 
16:10 – 16:30	<p><b>Noise Calculation of Various Design Thermoelectric Detection Pixel for UV Single Photons Registration</b>  <b><u>A. S. Kuzanyan<sup>1,3</sup>, A. A. Kuzanyan<sup>1,2</sup>, V. R. Nikoghosyan<sup>1</sup>, S. R. Harutyunyan<sup>1,3</sup></u></b>  <sup>1</sup><i>Institute for Physical Research, NAS of Armenia</i>  <sup>2</sup><i>University of California, Los Angeles, CA, USA</i>  <sup>3</sup><i>Russian-Armenian University, Yerevan, Armenia</i></p>
16:30 – 16:50	<p><b>Dressed states and suppression of dissipative processes</b>  <b><u>G. G. Grigoryan</u></b>  <i>Institute for Physical Research, NAS of Armenia</i></p>
16:50 – 17:10	<p><b>Polaron Mechanism of Conductivity in Zinc Oxide Films</b>  <b><u>N. R. Aghamalyan<sup>1</sup>, H. L. Ayvazyan<sup>1</sup>, R. K. Hovsepyan<sup>1</sup>, Y. A. Kafadaryan<sup>1</sup>, H. G. Mnatsakanyan<sup>1</sup>, A. R. Poghosyan<sup>1</sup>, T. A. Vartanyan<sup>2</sup></u></b>  <sup>1</sup><i>Institute for Physical Research, NAS of Armenia</i>  <sup>2</sup><i>Univ. of Information technology, Mechanics and Optics, Sankt-Petersburg, Russian Federation</i></p>
17:10 – 17:30	<p><b>Suppression of the light shift of the CPT resonance frequency in <sup>87</sup>Rb atoms</b>  <b><u>M. I. Vaskovskaya, E. A. Tsygankov, D. S. Chuchelov, S. A. Zibrov, V. V. Vassiliev, V. L. Velichansky</u></b>  <i>P. N. Lebedev Physical Institute, Russian Academy of Sciences, Moscow, Russia</i></p>
17:30 – 17:50	<p><b>Magnetic field values annihilating alkali atoms' transitions</b>  <b><u>A. Aleksanyan<sup>1,2</sup>, R. Momier<sup>1,2</sup>, E. Gazazyan<sup>1,3</sup>, A. Papoyan<sup>1</sup>, C. Leroy<sup>2</sup></u></b>  <sup>1</sup><i>Institute for Physical Research, NAS of Armenia</i>  <sup>2</sup><i>Laboratoire Interdisciplinaire Carnot de Bourgogne, UMR CNRS 6303, Université de Bourgogne Franche-Comté, Dijon, France</i></p>

	<sup>3</sup> Institute for Informatics and Automation Problems, NAS of Armenia, Yerevan, Armenia
17:50 – 18:10	<p>Temperature dynamics of laser heating of composites "substrate/amorphous silicon film" and "substrate/gold nanoparticles/amorphous silicon film"</p> <p><b>A. Fedotov, Y. Tsitavets, I. Dadenkov</b></p> <p><i>Belarusian State University, Minsk, Belarus</i></p>
18:10 – 19:10	<p style="text-align: center;"><b>EXHIBITION</b></p> <p>will be organized in the room 205 of the Conference building.</p> <p><b>The National Instruments (USA) branch in Armenia, LT Pyrkal (Armenia-Greece), ArmArdOptics (Armenia) etc. will demonstrate their products.</b></p>
19:10	<b>Bus to Yerevan</b>

Friday, September 16, 2022

Morning Session 10:00 – 11:50	
Chairmen: Viktor Red'kov, Atom Muradyan, Claude Leroy	
10:00 – 10:40	<p><b>Plenary report (online)</b></p> <p><b>Photoionization of Silver: spectroscopic research and application to radiopharmacy in the SPES – IsolPharm project context</b></p> <p><b>E. Mariotti<sup>1</sup>, A. Arzenton<sup>1,2</sup>, S. Farracane<sup>2</sup>, A. Khanbekyan<sup>1</sup>, O.S. Kwairakpam<sup>1,2</sup>, P. Nicolosi<sup>3</sup>, D. Scarpa<sup>2</sup>, A. Andriguetto<sup>2</sup></b></p> <p><sup>1</sup> DSFTA - Università di Siena, Siena, INFN – sezione di Pisa  <sup>2</sup> INFN – Laboratori Nazionali di Legnaro, viale dell’Università 2, Legnaro (PD)  <sup>3</sup> DEI – Università di Padova, LUXOR CNR IFN - Padova</p>
10:40 – 11:10	<p><b>Invited report</b></p> <p><b>Versatile Tools for Manipulating Light Enabled by the 4th Generation Optics</b></p> <p><b>N. Tabiryan</b></p> <p><i>BEAM Engineering for Advanced Measurements Co., Orlando, Florida, USA</i></p>
11:10 – 11:30	<b>Atomic cells production by laser technology</b>

	<p><b>D. S. Chuchelov<sup>1</sup>, A. B. Egorov<sup>2</sup>, E. A. Tsygankov<sup>1</sup>, V. V. Vassiliev<sup>1</sup>, M. I. Vaskovskaya<sup>1</sup>, V. L. Velichansky<sup>1,3</sup>, S. A. Zibrov<sup>1</sup></b></p> <p><sup>1</sup> <i>P. N. Lebedev Physical Institute, Russian Academy of Sciences, Moscow, Russia</i></p> <p><sup>2</sup> <i>Prokhorov General Physics Institute of the Russian Academy of Sciences, Moscow, Russia</i></p> <p><sup>3</sup> <i>National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia</i></p>
11:30 – 11:50	<b>Coffee break</b> 

<b>Special Session 11:50 – 15:15</b>	
<b>The Best Student Presentation Awards</b>	
<b>Chairmen: Lusine Tsarukyan, Pavel Muzhikyan, Armen Sargsyan</b>	
11:50 – 12:05	<p><b>Nanometric-thin K vapor cell used as a large-range magnetometer</b></p> <p><b>R. Momier<sup>1,2</sup>, A. Sargsyan<sup>2</sup>, A. Tonoyan<sup>2</sup>, M. Auzinsh<sup>3</sup>, D. Sarkisyan<sup>2</sup>, A. Papoyan<sup>2</sup> and C. Leroy<sup>1</sup></b></p> <p><sup>1</sup> <i>Laboratoire Interdisciplinaire Carnot de Bourgogne, UMR CNRS 6303, Université Bourgogne Franche-Comté, Dijon, France</i></p> <p><sup>2</sup> <i>Institute for Physical Research, NAS of Armenia</i></p> <p><sup>3</sup> <i>Department of Physics, University of Latvia, Rainis, Riga, Latvia</i></p>
12:05 – 12:20	<p><b>Terahertz generation using a nitrogen-doped diamond photoconductive antenna</b></p> <p><b>V. V. Bulgakova<sup>1</sup>, P. A. Chizhov<sup>1</sup>, M. S. Komlenok<sup>1</sup>, V. V. Kononenko<sup>1</sup>, V. V. Bukin<sup>1</sup>, A. A. Ushakov<sup>1</sup>, A. A. Khomich<sup>2</sup>, A. P. Bolshakov<sup>1</sup>, V. I. Konov<sup>1</sup>, S. V. Garnov<sup>1</sup></b></p> <p><sup>1</sup> <i>Prokhorov General Physics Institute of the Russian Academy of Sciences, Moscow, Russia</i></p> <p><sup>2</sup> <i>Kotelnikov Institute of Radio Engineering and Electronics RAS, Fryazino, Russia</i></p>
12:20 – 12:35	<p><b>An asymmetric version of the second Demkov-Kunike level crossing model</b></p> <p><b>T. A. Shahverdyan<sup>1,2</sup>, A. M. Ghazaryan<sup>1,2</sup>, and A. M. Ishkhanyan<sup>1,2</sup></b></p> <p><sup>1</sup> <i>Russian-Armenian University, Yerevan, Armenia</i></p> <p><sup>2</sup> <i>Institute for Physical Research, NAS of Armenia</i></p>
12:35 – 13:50	<p><b>Combined method of laser and chemical treatment of painted gypsum base-relief</b></p>

	<b>A. V. Vasileva<sup>1</sup>, A. K. Kareva<sup>2</sup>, V. A. Parfenov<sup>1</sup></b> <sup>1</sup> <i>St. Petersburg State Electrotechnical University "LETI" named after V.I. Ulyanova, St. Petersburg, Russian Federation</i> <sup>2</sup> <i>St. Petersburg State Academy of Art and Industry named after A.L. Stieglitz, St. Petersburg, Russian Federation</i>
12:50 – 14:00	<b>Lunch</b> 
14:00 – 14:15	<b>Surface enhanced Raman scattering by dye molecule on silver substrates</b> <b>M. Goncalves<sup>1</sup>, A. Melikyan<sup>2</sup>, H. Minassian<sup>3</sup>, P. Petrosyan<sup>4</sup></b> <sup>1</sup> <i>Ulm University, Ulm, Germany,</i> <sup>2</sup> <i>Institute of Applied problems of Physics, NAS of Armenia,</i> <sup>3</sup> <i>Yerevan Physics Institute,</i> <sup>4</sup> <i>Yerevan State University</i>
14:15 – 14:30	<b>Narrow-band and bright fluorescence of silver nanoclusters in a plasmonic cavity</b> <b>A. S. Gritchenko<sup>1</sup>, A. S. Kalmykov<sup>1</sup>, B. A. Kulnitskiy<sup>2,3</sup>, Y. G. Vainer<sup>1</sup>, Shao-Peng Wang<sup>4</sup>, B. Kang<sup>4</sup>, P. N. Melentiev<sup>1</sup> and V. I. Balykin<sup>1</sup></b> <sup>1</sup> <i>Institute of Spectroscopy RAS, Moscow, Troitsk, Russia.</i> <sup>2</sup> <i>Technological Institute for Superhard and Novel Carbon Materials, Moscow, Troitsk, Russia</i> <sup>3</sup> <i>Moscow Institute of Physics and Technology, Moscow reg., Dolgoprudny, Russia</i> <sup>4</sup> <i>State Key Laboratory of Analytical Chemistry for Life Science and Collaborative Innovation Center of Chemistry for Life Sciences, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing, P. R. China</i>
14:30 – 14:45	<b>Synthesis, Structure, Magnetic and Magnetic Heating Properties of Carbon Coated Fe-Fe<sub>3</sub>C Nanoparticles</b> <b>H. Gyulasaryan<sup>1</sup>, E. Myrovali<sup>2</sup>, G. Chilingaryan<sup>1</sup>, E. Papadopoulou<sup>3</sup>, N. Tetos<sup>3</sup>, A. Ginoyan<sup>1</sup>, A. Makridis<sup>2</sup>, N. Sisakyan<sup>1</sup>, M. Spasova<sup>3</sup>, M. Farle<sup>3</sup>, M. Angelakeris<sup>2</sup>, A. Manukyan<sup>1</sup></b> <sup>1</sup> <i>Institute for Physical Research, NAS of Armenia</i> <sup>2</sup> <i>Physics Department, Aristotle University of Thessaloniki, Greece</i> <sup>3</sup> <i>Faculty of Physics and Center of Nanointegration (CENIDE), University of Duisburg-Essen, Germany</i>
14:45 – 15:00	<b>Influence of buffer gases on the quality factor of CPT-resonance in <sup>87</sup>Rb: Ar and Ne vs N<sub>2</sub></b> <b>K. M. Sabakar<sup>1,2</sup>, M. I. Vaskovskaya<sup>1</sup>, D. S. Chuchelov<sup>1</sup>, E. A. Tsygankov<sup>1</sup>, S. A. Zibrov<sup>1</sup>, V. L. Velichanskiy<sup>1,2</sup></b>

	<p><sup>1</sup> The P.N. Lebedev Physical Institute of the Russian Academy of Sciences, Moscow, Russia</p> <p><sup>2</sup> National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia</p>
15:00 – 15:15	<p><b>LiNbO<sub>3</sub>:Tm<sup>3+</sup> crystal: Material for radiation balanced laser</b></p> <p><b>N. Mkhitaryan<sup>1,2</sup>, G. Demirkhanyan<sup>1,2</sup>, N. Kokanyan<sup>3,4</sup>, M. Aillerie<sup>3</sup>, E. Kokanyan<sup>1,2</sup></b></p> <p><sup>1</sup> Institute for Physical Research, NAS of Armenia  <sup>2</sup> Armenian State Pedagogical University after Kh. Abovyan, Yerevan, Armenia  <sup>3</sup> Université de Lorraine, Laboratoire Matériaux Optiques, Photonique et Systèmes, Metz, France  <sup>4</sup> Laboratoire Matériaux Optiques Department of photonics, LMOPS, Metz, France</p>
15:15 – 15:35	<b>Coffee break</b> ☕

<b>Poster Session 15:40 – 17:00</b>	
<b>Chairmen: Lusine Tsarukyan, Pavel Muzhikyan, Armen Sargsyan</b>	
<b>Poster №</b>	
1	<p><b>Optical Techniques for the Study of DNA–porphyrin Interactions</b></p> <p><b>L. Aloyan, Y. Dalyan</b></p> <p><i>Molecular Physics Department, Yerevan State University</i></p>
2	<p><b>Effect of <math>\gamma</math>-Irradiation on the Semitransparent Gray Color Obsidian in the 5 to 500 kGy Range</b></p> <p><b>N. R. Aghamalyan, I. A. Gambaryan, E. A. Kafadaryan, M. N. Nersisyan, H. T. Gyulasaryan, G. N. Chilingaryan</b></p> <p><i>Institute for Physical Research, NAS of Armenia</i></p>
3	<p><b>Formation of Ce<sup>3+</sup> Luminescence Bands in YAG:Ce crystals</b></p> <p><b>T. I. Butaeva, K. L. Hovhannesyan, A. V. Eganyan, A. G. Petrosyan</b></p> <p><i>Institute for Physical Research, NAS of Armenia</i></p>
4	<p><b>Depth Spectroscopic Analysis of the YAG - Yb<sup>3+</sup> ceramics</b></p> <p><b>G. Demirkhanyan,<sup>1,5</sup> B. Patrizi,<sup>2*</sup> R. Kostanyan,<sup>1,6</sup> J. Li,<sup>4</sup> A. Pirri,<sup>3</sup> Y. Feng<sup>4</sup>, T. Xie,<sup>4</sup> Zh. Yang,<sup>4</sup> M. Vannini,<sup>2</sup> M. Becucci,<sup>6</sup> D. Zargaryan,<sup>1</sup> G. Toci<sup>2</sup></b></p> <p><sup>1</sup> Institute for Physical Research, NAS of Armenia</p>

	<p><sup>2</sup> <i>Istituto Nazionale di Ottica, INO, Consiglio Nazionale delle Ricerche, CNR, Italy</i>  <sup>3</sup> <i>Istituto di Fisica Applicata "Carrara", IFAC, CNR, Italy</i>  <sup>4</sup> <i>Shanghai Institute of Ceramics, Chinese Academy of Sciences, China;</i>  <sup>5</sup> <i>Armenian State Pedagogical University (ASPU), Armenia</i>  <sup>6</sup> <i>Università di Firenze, Italy</i>  <sup>7</sup> <i>National Academy of Sciences of Armenia, Armenia</i></p>
5	<p><b>Investigation of YAG:Pr,Ca Scintillator Crystals Annealed in Air</b></p> <p><b>M. V. Derdzyan<sup>1</sup>, K. L. Hovhannesyan<sup>1</sup>, S. N. C. Santos<sup>2</sup>, G. R. Asatryan<sup>3</sup>, C. Dujardin<sup>2</sup>, A. G. Petrosyan<sup>1</sup></b></p> <p><sup>1</sup> <i>Institute for Physical Research, NAS of RA</i>  <sup>2</sup> <i>CNRS, Institut Lumière Matière, Université de Lyon, Université Claude Bernard Lyon 1, France</i>  <sup>3</sup> <i>Ioffe Institute, St. Petersburg, Russia</i></p>
6	<p><b>Synthesis and Spectroscopic Properties of YAlO<sub>3</sub>:Er Crystals for 1.6μm Lasers</b></p> <p><b>M. V. Derdzyan<sup>1</sup>, K. L. Hovhannesyan<sup>1</sup>, A. V. Eganyan<sup>1</sup>, A. G. Petrosyan<sup>1</sup>, K. N. Gorbachenya<sup>2</sup>, V. E. Kisel<sup>2</sup>, A. A. Tarachenko<sup>2</sup>, and N. V. Kuleshov<sup>2</sup></b></p> <p><sup>1</sup> <i>Institute for Physical Research, NAS of RA</i>,  <sup>2</sup> <i>Center for Optical Materials and Technologies, Belarusian National Technical University, Minsk, Belarus</i></p>
7	<p><b>Investigation of bremsstrahlung in electrolyzers with electrolyte from ordinary water</b></p> <p><b>R. N. Balasanyan, I. G. Grigoryan, P. H. Muzhikyan, V. S. Arakelyan, R. B. Kostanyan</b></p> <p><i>Institute for Physical Research, NAS of Armenia</i></p>
8	<p><b>Gd<sub>3</sub>Sc<sub>2</sub>Al<sub>3</sub>O<sub>12</sub>:Ce Scintillator Crystals with Ca<sup>2+</sup>, Mg<sup>2+</sup> and Li<sup>+</sup> Ions</b></p> <p><b>K. L. Hovhannesyan, M. V. Derdzyan, A. V. Yeganyan, A. G. Petrosyan</b></p> <p><i>Institute for Physical Research, NAS of Armenia</i></p>
9	<p><b>Scattering of a plane wave on a matte surface</b></p> <p><b>A. Zh. Khachatrian, A. F. Parsamyan</b></p> <p><i>National polytechnic university of Armenian, Yerevan, Armenia</i></p>
10	<p><b>Using a focusing horn to detect humans in the thermal infrared region</b></p> <p><b>A. E. Martirosyan<sup>1</sup>, V. A. Martirosyan<sup>1,2</sup>, R. B. Kostanyan<sup>1</sup>, P. H. Muzhikyan<sup>1</sup></b></p> <p><sup>1</sup> <i>Institute for Physical Research, NAS of Armenia</i></p>

	<sup>2</sup> YSU, Faculty of Mathematics and Mechanics, Yerevan, Armenia
11	<p><b>Formation of nanostructured thin films from solid-phase pyrolysis of copper phthalocyanine</b></p> <p><b>S. T. Pashayan<sup>1</sup>, H. T. Gyulasaryan<sup>1</sup>, A. S. Manukyan<sup>1</sup>, S.V. Zlotski<sup>2</sup>, V. M. Anischchik<sup>2</sup>, O. V. Korolik<sup>2</sup></b></p> <p><sup>1</sup><i>The Institute for Physical Research of NAS of Armenia</i>  <sup>2</sup><i>Belarusian State University, Minsk, Belarus</i></p>
12	<p><b>Thin Film Field-Effect Transistor with Ferroelectric Channel</b></p> <p><b>N. R. Aghamalyan, H. L. Ayvazyan, R. K. Hovsepyan, Y. A. Kafadaryan, H. G. Mnatsakanyan, S. I. Petrosyan, A. R. Poghosyan</b></p> <p><i>Institute for Physical Research, NAS of Armenia</i></p>
13	<p><b>Optical Properties of Polarons in Ag-doped ZnO Films</b></p> <p><b>A. Sarkisyan, R. Hovsepyan, N. Aghamalyan, M. Nersisyan, S. Petrosyan, I. Gambaryan, A. Poghosyan, S. Harutyunyan, Y. Kafadaryan</b></p> <p><i>Institute for Physical Research, NAS of Armenia</i></p>
17:00 – 17:50	<b>Closing ceremony</b>
18:00	<b>Bus to Yerevan</b>

## **IMPORTANT INFORMATION**

### **Yerevan-Ashtarak-Yerevan bus operation for foreign participants during conference days**

**Bus departure on Conference days from the Building of the National Academy of Sciences (24 Marshal Baghramyan ave.; 3 min walking distance from the Marshal Baghramyan Metro Station):**

**14 September, at 8:45,**

**15, 16 September, at 9:00**

The trip duration from Yerevan to the Institute for Physical Research (IPR) in Ashtarak is around 30 min.

Return from IPR (Ashtarak) to Yerevan is planned in accordance with the Conference Program

**The regular Institute bus with 45 seats for the Yerevan-Ashtarak roundtrip, will serve the IPR staff and Conference participants from different Armenian scientific organizations and Universities and will operate on Conference days on a regular schedule:**

**The bus will depart from France square in the center of Yerevan at 8:30 and return from IPR (Ashtarak) to Yerevan at 17:00.**

## PLENARY AND INVITED SPEAKERS

### PLENARY SPEAKERS



**Ron Folman**  
*Ben-Gurion University of  
the Negev, Israel*



**Tigran Galstian**  
*Université Laval, Québec,  
Canada*



**Emilio Mariotti**  
*University of Siena, Italy*

## INVITED SPEAKERS



**V.L. Velichansky**  
*P. N. Lebedev Physical  
Institute, RAN, Russia*



**Artur Ishkhanyan**  
*Institute for Physical  
Research, NAS, Armenia*



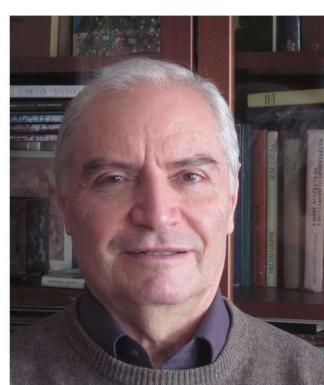
**Olga Fedotova**  
*Scientific Practical  
Material Research Center,  
NAS, Belarus*



**Rafael Drampyan**  
*Institute for Physical  
Research, NAS, Armenia*



**Nelson Tabiryan**  
*Beam Engineering for  
Advanced Measurements  
BEAM Co. USA*



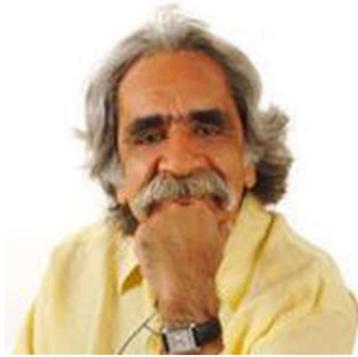
**Gagik Djotyan**  
*Wigner Research  
Centre for Physics,  
Hungary*



**Vladimir Krainov**  
*Moscow Institute of Physics and  
Technology, Russia*



**Atom Muradyan**  
*Yerevan State University  
Armenia*



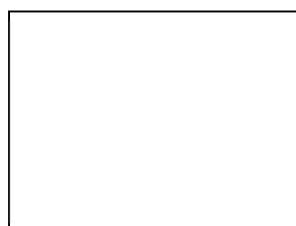
**Vartkess Ara Apkarian**  
*University of California at Irvine,  
Irvine, USA*



**Denis Brazhnikov**  
*Institute of Laser  
Physics SB RAS, Russia*



**David Sarkisian**  
*Institute for Physical  
Research, NAS, Armenia*



**Viktor Red'kov**  
*B. I. Stepanov  
Institute of Physics,  
Minsk, Belarus*



**Edvard Kokanyan**  
*Institute for Physical  
Research, NAS, Armenia*