

PROGRAM
ARMENIA in FOCUS SPIE.
4th International Symposium “Optics & its Applications”
July 25-28, 2016, Armenia

25 July	
LT-Pyrkal	
<i>21 Shopron Str., Yerevan, 0090, Armenia</i>	
9:00-9:30	
Registration in the lobby of LT-Pyrkal	
Opening Ceremony	
09:30-09:50	Welcome words by directors of OPTICS-2016: G. Buniatyan, A. Papoyan, H. Sarkisyan, D. Blaschke
Chair: Tigran Shahbazyan	
09:50-10:20	SPIE’s Role in the Photonic Future Eugene Arthurs (<i>SPIE, USA</i>)
10:20-10:30	Kaleidoscope of 10 years of YSU & NAS SPIE Student Chapter Astghik Chalyan (<i>Russian-Armenian University, Armenia</i>)
10:30-11:30	Optical 3D-Cameras I: physical and information theoretical aspects Gerd Häusler (<i>Institute of Optics, Information and Photonics, University of Erlangen-Nuremberg Germany</i>) - SPIE Visiting Lecturer
11:30-12:00	Novel components and devices for mid IR sensors Ryszard Buczyński (<i>Institute of Electronic Materials Technology, Poland; University of Warsaw, Poland</i>)
12:00-12:20	
Coffee Break	
Chair: David Blaschke	
12:20-12:50	Universal local density of states for nanoplasmonic systems: From energy transfer to strong coupling to loss compensation and spasing Tigran Shahbazyan (<i>Jackson State University, USA</i>)
12:50-13:05	Integrated Silicon Photonics and Microring Resonators for biosensing applications Tatevik Chalyan (<i>University of Trento, Italy</i>)
13:05-13:15	Phase extraction and displacement measurement approaches in phase-step diffractometry Yousef Pourvais (<i>University of Zanjan, Iran; University of Tehran, Iran</i>)
13:15-13:25	Selective reflection of laser radiation from an alkali metal nanocell Emmanuel Klinger (<i>Université de Bourgogne - Franche-Comté, France</i>)
13:25-13:35	Numerical Methods for Signal Analysis in Optical Coherence Tomography Irina Dolganova (<i>Bauman Moscow State Technical University, Russia</i>)

13:35-13:45	Investigation of Electromagnetically Induced Transparency effect in potassium vapor using a nanometric-thin cell Arevik Amiryan (<i>Institute for Physical Research of NAS, Armenia; Université de Bourgogne - Franche-Comté, France</i>)
13:45-13:55	Morphology Induced Optical Behavior of Annealed Self-assembled Gold Nanoparticles Zeinab Ebrahimpour (<i>Shahid Beheshti University, Iran</i>)
13:55-14:05	Far IR investigations of low energy excitations in $\text{KEr}(\text{MoO}_4)_2$ Sergii Poperezhai (<i>B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Ukraine</i>)
14:05-14:15	The Modeling of Kinetic Processes in the Ultrafast Sensor of Thermoelectric Single Photon Detector for UV Photons Astghik Kuzanyan (<i>Institute for Physical Research of NAS, Armenia</i>)
14:15-14:25	Application of phase-step diffractometry in optical surface testing using a 2D array of reflective disks Pegah Asgari (<i>University of Zanjan, Iran</i>)
14:25-15:30 Lunch	
15:30-17:30 Poster Presentations	
18:00 Armenian SPIE Student Chapter's Birthday Banquet	

26 July Yerevan State University (YSU) <i>1 Alex Manoogian str., Yerevan, 0025, Armenia</i>	
Chair: Anna Kotanjyan	
09:00-09:10	Solitonic Self-Spectral Compression of Supercontinuum Fraction Vardan Avetisyan (<i>Yerevan State University, Armenia</i>)
09:10-09:20	Laser assisted fabrication and modification of metal oxides nanostructures Natalie Tarasenko (<i>B.I. Stepanov Institute of Physics of NASB, Belarus</i>)
09:20-09:30	Optical vortex response to introduced phase objects Mateusz Szatkowski (<i>Wroclaw University of Technology, Poland</i>)
09:30-09:40	Neutrons diffraction on periodic structures in the presence of external electromagnetic field Vardan Martikyan (<i>Yerevan State University, Armenia</i>)
09:40-09:50	Optical characteristics of graphene films on surfaces with different types of conductivity Andrii Shcherbakov (<i>Taras Shevchenko National University of Kyiv, Ukraine</i>)
09:50-10:00	Influence of electrical ring resonators metasurface parameters on perfect absorption in terahertz frequency range Daniel Gomon (<i>ITMO University, Russia</i>)
10:00-11:00	Optical 3D-Cameras II: sensors and applications at the limits Gerd Häusler (<i>Institute of Optics, Information and Photonics, University of Erlangen-Nuremberg Germany</i>) - SPIE Visiting Lecturer

11:00-11:20
Coffee Break

Chair: Ryszard Buczyński

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| 11:20-12:20 | Optical telecommunications at the limit: Can soliton molecules help?
Fedor Mitschke (<i>Institut für Physik, Universität Rostock, Germany</i>) - OSA Traveling Lecturer |
| 12:20-12:30 | Generation of Optical Radiation in Nanotube Undulators
Koryun Gevorgyan (<i>Yerevan State University, Armenia</i>) |
| 12:30-12:40 | Asymmetric Transmission in Liquid-Crystals of Two Cholesterics with Different Pitches and Chiralities
Hermine Gharagulyan (<i>Yerevan State University, Armenia</i>) |
| 12:40-12:50 | Diagnostic Device on Smartphone Basis for Obtaining the Skin Chromophore Density Distribution Maps
Matīss Lācis (<i>University of Latvia, Latvia</i>) |
| 12:50-13:00 | Identification nanostructured composites of poly triazole-amide-imides by microsphere-assisted digital holographic microscopy
Vahid Abbasian (<i>Institute for Advanced studies in Basic Sciences, Iran</i>) |
| 13:00-13:10 | The spectrum and separability of 2-qubit mixed X-states
Astghik Torosyan (<i>JINR Dubna, Russia</i>) |
| 13:10-13:20 | Photoluminescent properties of the Mn and Yb doped ZnSe crystals
Anatoli Caramalac (<i>Moldova State University, Moldova</i>) |
| 13:20-13:30 | Tunable Optical Radiation Formed in Crystalline Undulator
Hayk Gevorgyan (<i>Yerevan State University, Armenia</i>) |

13:30-15:00
Lunch Break

Chair: Levon Mouradian

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| 15:00-15:10 | Cavity solitons synchronization
Shayesteh Rahmani Anbardan (<i>University of Tabriz, Iran</i>) |
| 15:10-15:20 | Multi-spectral fluorescence imaging of skin malignancies
Anastasia Lesnichaya (<i>Bauman Moscow State Technical University, Russia</i>) |
| 15:20-15:30 | Enhanced Nonlinear Light Conversion in Globular Photonic Crystals at the Band-Gap Pumping
Arsen Zotov (<i>Bauman Moscow State Technical University, Russia</i>) |
| 15:30-15:40 | Multifunctionality thin films obtained by MAPLE and PLD techniques
Luiza Ciucu (<i>University of Bucharest, Romania</i>) |
| 15:40-15:50 | Electric field effect on hot-electron energy-loss rate via LA-phonon scattering in a cylindrical quantum wire
Armen Stepanyan (<i>Yerevan State University, Armenia</i>) |
| 15:50-16:00 | Structured illumination for high resolution Mirau digital holography
Yasaman Ganjkhani (<i>Institute for Advanced studies in Basic Sciences, Iran</i>) |

16:00-16:15	On Quantum Tunneling of Inverse Power Singular Potentials Gevorg Muradyan (<i>Yerevan State University, Armenia</i>)
16:15-17:00	SPIE & OSA Student Chapters Presentations
17:00-18:00	Lab Tour
19:00	Social program: Visiting Museum of Aram Khachaturian (<i>3 Zarobyan str.</i>) Concert by the Khachaturian trio

27 July	
The Institute for Physical Research <i>Ashtarak-2, Ashtarak, 0203, Armenia</i>	
Chair: Aram Papoyan	
10:00-10:30	A self-interfering clock as a “which path” witness Yair Margalit (<i>Ben-Gurion University of the Negev, Israel</i>)
10:30-11:00	Coupling of localized surface plasmons to epitaxial quantum dots excitons Tigran Vartanyan (<i>ITMO University, Russia</i>)
11:00-11:20	Synchrotron radiation from a relativistic charged particle rotating around a cylindrical diffraction grating Anna Kotanjyan (<i>Yerevan State University, Armenia</i>)
11:20-11:35	Electronic and optical properties of conical quantum dots ensemble David Hayrapetyan (<i>Russian-Armenian University, Armenia</i>)
11:35-12:00 Coffee Break	
Chair: Asghar Asgari	
12:00-12:30	Towards all Optical Frequency Switching with Cavity Solitons Reza Kheradmand (<i>University of Tabriz, Iran; ICTP, Italy</i>)
12:30-12:50	X-ray interferometric temperature gradient moiré fringes in the frame of eikonal approximation Minas Balyan (<i>Yerevan State University, Armenia</i>)
12:50-13:10	SPR based optical biosensors Sohrab Ahmadi-Kandjani (<i>University of Tabriz, Iran</i>)
13:10-13:30	Confluent Heun potentials for 1D Schrödinger equation Artur Ishkhanyan (<i>Institute for Physical Research of NAS, Armenia</i>)
13:30-13:45	Confluent Heun functions as terms of solutions of the quantum two-state problem Hrayr Azizbekyan (<i>Institute for Physical Research of NAS, Armenia</i>)
13:45	
Excursion: Oshakan, Etchmiadzin	

28 July
Russian-Armenian University
123 Hovsep Emin str., Yerevan, 0051, Armenia

Chair: Hayk Sarkisyan

09:00-09:30 **Calculating spectral and optical characteristic of quantum dots**
Sergue Vinitsky (*JINR Dubna, Russia*)

09:30-10:00 **Software for solving boundary value problems in application to waveguide processes**
Alexander Gusev (*JINR Dubna, Russia*)

10:00-10:30 **The effects of CdSe/ZnS Core/Shell Colloidal Quantum Dots on performance of Silicon Solar Cell**
Asghar Asgari (*University of Tabriz, Iran; University of Western Australia, Australia*)

10:30-11:00 **Dynamical Schwinger process in high-intensity laser fields**
David Blaschke (*University of Wroclaw, Poland; JINR Dubna, Russia; MEPhI, Russia*)

11:00-11:20 **Binding Energy of the Dielectrically Enhanced Screened Exciton in Semiconductor Quantum Well**
Kamo Aharonyan (*National Polytechnic University of Armenia, Armenia*)

11:00-11:20
Coffee Break

Chair: Sergue Vinitsky

11:20-11:50 **Study of microstructural peculiarities and deformation state of ettringite crystals in Type K cement pastes by FTIR spectroscopy, optical microscopy, combined SEM-EDS, and XRD techniques**
Valeri Harutyunyan (*Yerevan State University, Armenia*)

11:50-12:50 Professional development lecture:
How to research
Gerd Häusler (*Institute of Optics, Information and Photonics, University of Erlangen-Nuremberg Germany*) - **SPIE Visiting Lecturer**

12:50-...
Closing Ceremony

Group Photo

Farewell party:
100th Anniversary of the OSA
10th Anniversary of the Armenian SPIE Student Chapter
5th Anniversary of the Armenian Territorial Committee of ICO

POSTERS:

- 1. Chirp measurement of ultrashort pulses by the use of train structured by similariton's superposition**
Karen Apresyan (*Yerevan State University, Armenia*)
- 2. Spectron's Phase Peculiarities: Numerical Study**
Narek Karapetyan (*Yerevan State University, Armenia*)
- 3. Toroidal quantum dot: Electronic and optical properties**
David A. Baghdasaryan (*Russian-Armenian University, Armenia*)
- 4. Rashba and Dresselhaus spin-orbit coupling effects on the electronic structure of quantum wires under the influence of in-plane magnetic field**
Vika Arzumanyan (*Yerevan State University, Armenia*)
- 5. Confined and interface polar optical phonon-limited electron mobility in quantum wires in the presence of perpendicular electric field**
Yeghiazar Brsoyan (*Yerevan State University, Armenia*)
- 6. Influence of image charge effect on impurity-related optical absorption coefficient in a spherical quantum dot**
Aram Mkhitaryan (*Yerevan State University, Armenia*)
- 7. Intersubband optical absorption in GaAs parabolic quantum well due to scattering by ionized impurity centers, acoustical and optical phonons**
Artak H. Gevorgyan (*Russian-Armenian University, Armenia*)
- 8. Investigation of nanograting structures using method of auxiliary sources**
Vitali Ghoghberidze (*Ivane Javakhishvili Tbilisi State University, Georgia*)
- 9. Parametrically driven nonlinear oscillator: regimes of selective excitations and quantum statistics of modes**
Aramayis H. Harutyunyan (*Institute for Physical Research, NAS of Armenia, Armenia*)
- 10. Calculation of characteristics of 2D Metal-semiconductor Field Effect Transistor**
Areg Kocharyan (*Yerevan Engineering University, Armenia*)
- 11. CeB₆ hexaboride thin films deposition and investigation a promising material for a sensor of ultrafast single-photon detector**
Astghik A. Kuzanyan (*Institute for Physical Research, NAS of Armenia, Armenia*)
- 12. Homogenous Solution Analysis of Discrete Cavity Solitons with Carriers**
Ahmad Motahharynia (*University of Tabriz, Tabriz, Iran*)
- 13. Electron diffraction studies of solid mixtures CH₄ – N₂**
Nataliia S. Mysko-Krutik (*B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Ukraine*)
- 14. Peculiarities of the cavity with parallel plate at excitation through subwavelength slit**
Khachik Sahakyan (*Yerevan State University, Armenia*)
- 15. Detection of Adulteration in Edible Oils using a Low Cost Imaging Spectrometer**
Badrinath Vadakkapattu Canthadai (*Vidya Jyothi Institute of Technology, India; Nanolytix, Canada*)

- 16. Electro-absorption in conical quantum dot**
Astghik Chalyan (*Russian-Armenian University, Armenia*)
- 17. Exciton spectroscopy of spatially separated electrons and holes in the dielectric quantum dots**
David B. Hayrapetyan (*Russian-Armenian University, Armenia*)
- 18. Exciton states and optical absorption in core/shell/shell spherical quantum dot**
Hayk A. Sarksiyan (*Russian-Armenian University, Armenia; Yerevan State University, Armenia; Peter the Great St. Petersburg Polytechnic University, Russia*)
- 19. Optical properties of double-gated silicon nanowire FETs**
Hrant Khondkaryan (*Yerevan State University, Armenia*)
- 20. FR-IRK mathematical model for solving numerical solution of ordinary differential equations**
Faranak Rabiei (*Universiti Putra Malaysia, Malaysia*)
- 21. Numeric modelling of photophysical properties of hybrid gold nanoparticles**
Mishik Kazaryan (*Lebedev Physical Institute of the Russian Academy of Sciences, Russia*)
- 22. Excitonic absorption in gated graphene systems**
Anahit P. Djotyan (*Yerevan State University, Armenia*)
- 23. X-ray nonlinear Bragg diffraction**
Minas Balyan (*Yerevan State University, Armenia*)
- 24. Resonant circular birefringent transmittance modes in graphene photonic crystals**
Reza Abdi-Ghaleh (*University of Bonab, Iran*)
- 25. Tunable and polarization dependent absorption in graphene-based hyperbolic metamaterials**
Amir Madani (*University of Bonab, Iran*)