



# International conference **NanoPQIQO-2024**

13 – 17 May, 2024

RAU, new building 7<sup>th</sup> floor, Lecture Hall named after H. Orbeli  
Yerevan, Armenia

<b>Day 1: May 13</b>	<b>Chairmen: E. Kazaryan / D. Hayrapetyan</b>
9:00 to 10:00	<b>Registration</b>
10:00 to 10:20	<b>Welcome greetings</b>
10:20 to 11:00	<i>Keynote talk</i> <b>Nika Akopian</b> , Technical University of Denmark, Denmark <i>“Quantum Nanophotonics with Quantum Dots, Nanowires and Atomic Systems”</i>
11:00 to 11:20	<i>Invited talk</i> <b>Michał Zieliński</b> , Nicolaus Copernicus University, Poland <i>“Exploiting Crystal Lattice for Efficient, Atomistic Computations of Multi-Million Atom Nanostructures”</i>
11:20 to 11:40	<i>Invited talk</i> <b>Juan Climente</b> , Universitat Jaume I, Spain <i>“Colloidal Nanoplatelets: Bicolor Emission and Superlattices”</i>
11:40 to 11:55	<b>Coffee Break</b>
	<b>Chairmen: Nika Akopian / Michał Zieliński</b>
11:55 to 12:35	<i>Keynote talk</i> <b>Vanni Lughì</b> , University of Trieste, Italy <i>“Engineering (with) Nanoparticles”</i>
12:35 to 12:55	<i>Invited talk</i> <b>Maksim Vinnichenko</b> , Peter the Great St. Petersburg Polytechnic University, Russia <i>“Dynamics of Photoinduced Light Absorption in Ge/Si Quantum Dots”</i>
12:55 to 14:00	<b>Lunch Break</b>
	<b>Chairmen: M. Vinnichenko / P. Mantashyan</b>



The event is organized by EC H2020 Twinning NanoQIQO project (GA No 952335)

14:00 to 14:40	<i>Keynote talk</i> <b>Kristiaan Neyts</b> , The Hong Kong University of Science and Technology, China “Liquid Crystal Materials for Photonic Applications”
14:40 to 15:00	<i>Invited talk</i> <b>Davit A. Ghazaryan</b> , Yerevan State University, Armenia “Anisotropic Optical Properties and Emergent Phenomena in Van der Waals Crystals of Rhenium Disulphide and Arsenic Trisulphide”
15:00 to 15:20	<i>Invited talk</i> <b>Mushegh Rafayelyan</b> , Yerevan State University, Armenia “Arbitrary Transmission Matrix Engineering of Disordered Medium”
15:20 to 15:35	<b>Coffee Break</b>
<b>Chairmen: J. Climente / V. Lughì</b>	
15:35 to 15:55	<i>Invited talk</i> <b>Vanik Shahnazaryan</b> , Moscow Institute of Physics and Technology, Russia. “Electrostatic Control of Nonlinear Polaritons in a Monolayer Semiconductor”
15:55 to 16:15	<i>Invited talk</i> <b>Reza Abdi-Ghaleh</b> , University of Bonab, Iran “Magneto-optics in Graphene-included Layered Structures”
16:15 to 16:30	<i>Regular talk</i> <b>Yuri Bleyan</b> , Russian-Armenian University, Armenia “Biexciton in the ellipsoidal quantum dot under the influence of the external magnetic field”
16:30 to 16:45	<i>Regular talk</i> <b>Eduard Hakobyan</b> , Russian-Armenian University, Armenia. “Nonlinear Optical Properties of Coupled Quantum Dots in Peanut Configuration”
16:45 to 17:00	<i>Regular talk</i> <b>Grigor Mantashyan</b> , Russian-Armenian University, Armenia “Modeling of Quantum Dots with the Finite Element Method”
18:00 to 21:00	<b>Welcome Dinner at Genacvale pandok*</b> * address: Papazyan 23, Yerevan; web-page: <a href="https://genacvale.am/en/">https://genacvale.am/en/</a>

**Day 2: May 14 Chairmen: A. Mukasyan / A. Kuzanyan**

10:00 to 10:40	<i>Keynote talk</i> <b>Mark Friesen</b> , University of Wisconsin-Madison, USA “Variability in Electrostatically Defined Quantum-Dot Qubits in Silicon”
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	<i>Invited talk</i>
10:40 to 11:00	<b>Hayk Sarkisyan</b> , Russian-Armenian University, Armenia <i>“Boltzmann Statistics of Electron Gas in Two-Dimensional Quantum Dots”</i>
	<i>Invited talk</i>
11:00 to 11:20	<b>Vijay Janyani</b> , Malaviya National Institute of Technology Jaipur (MNIT), India <i>“CdTe Solar Cells Utilizing Double Layer and Pyramidal Antireflective Coatings for Efficiency Enhancement”</i>
	<i>Regular talk</i>
11:20 to 11:35	<b>Tigran Sargsyan</b> , Russian-Armenian University, Armenia <i>“Comparative Study of Intense Non-Diffractive Laser Beam Effects on InAs/GaAs Quantum Dot”</i>
11:35 to 11:50	<b>Coffee Break</b>
	<b>Chairmen: M. Friesen / H. Sarkisyan</b>
	<i>Keynote talk</i>
11:50 to 12:30	<b>Alexander Mukasyan</b> , University of Notre Dame, USA <i>“Self-Sustained Chemical Reactions and Nanomaterials”</i>
	<i>Invited talk</i>
12:30 to 12:50	<b>Astghik Kuzanyan</b> , Institute for Physical Research of NAS RA, Armenia <i>“Simulation of Heat Propagation Processes of a Thermoelectric Single Photon Detector”</i>
	<i>Regular talk</i>
12:50 to 13:05	<b>Astghik Tsokolakyan</b> , A.B. Nalbandyan Institute of Chemical Physics, Armenia <i>“Synthesis and Characterization of Al-Doped ZnO Plasmonic Nanoparticles and Their Interaction with the Globular Protein Bovine Serum Albumin”</i>
13:05 to 13:15	<b>Group Photo</b>
13:15 to 14:00	<b>Lunch Break</b>
	<b>Chairmen: V. Janyani / T. Sargsyan</b>
	<i>Keynote talk</i>
14:00 to 14:40	<b>Jacques Jupille</b> , Sorbonne University, France <i>“Functional Coatings at the Nanoscale”</i>
	<i>Regular talk</i>
14:40 to 15:00	<b>Luka Baklaga</b> , Business and Technology University (BTU), Georgia <i>“Quantum-PhysNet: Precision Nanomaterial Modeling via Quantum Neural Networks and Physics-Informed Learning”</i>
15:00 to 15:15	<b>Coffee Break</b>
	<i>Invited talk</i>
15:15 to 15:35	<b>Armen Allahverdyan</b> , A.I. Alikhanyan National Science Laboratory, Armenia <i>“Dissipative Search of an Unstructured Database”</i>

	<i>Regular talk</i>
15:35 to 15:50	<b>Varazdat Stepanyan</b> , A.I. Alikhanyan National Science Laboratory, Armenia <i>“Thermal Transitions in a One-Dimensional, Finite-Size Ising Model”</i>
	<i>Regular talk</i>
15:50 to 16:05	<b>Hakob Avetisyan</b> , A.I. Alikhanyan National Science Laboratory, Armenia <i>“Inverse Quantum Optical Scattering from Moving Dielectric”</i>
17:00	<b>Visit to Brandy factory</b>

**Day 3: May 15 Chairmen: K. Neyts / C. Morais Smith**

	<i>Keynote talk</i>
10:00 to 10:40	<b>Heidi Ottevaere</b> , Vrije Universiteit Brussel, Belgium <i>“Nanomaterials for Enhanced Biophotonic Sensing: Surface-Enhanced Raman Spectroscopy and Beyond”</i>
	<i>Invited talk</i>
10:40 to 11:00	<b>Tigran Bagdasaryan</b> , Vrije Universiteit Brussel, Belgium <i>“3D Nanoprinting of Multimode Interference Couplers for Applications in Spatial Division Multiplexing”</i>
	<i>Invited talk</i>
11:00 to 11:20	<b>Armen Sargsyan</b> , Institute for Physical Research of NAS RA, Armenia <i>“Atom-Surface Interactions in Optical Nanocells”</i>
	<i>Regular talk</i>
11:20 to 11:35	<b>Hermine Gharagulyan</b> , A.B. Nalbandyan Institute of Chemical Physics, Armenia <i>“Manipulating Optical Features of MoS<sub>2</sub>-decorated rGO Nanosystems”</i>
11:35 to 11:50	<b>Coffee Break</b>
	<b>Chairmen: Heidi Ottevaere / A. Sargsyan</b>
	<i>Keynote talk</i>
11:50 to 12:30	<b>Shinji Kuroda</b> , University of Tsukuba, Japan <i>“Single Spin of a Transition-Metal Atom in Semiconductor Quantum Dots”</i>
	<i>Invited talk</i>
12:30 to 12:50	<b>Cristiane Morais Smith</b> , Utrecht University, Netherlands <i>“Quantum Fractals: From Meta- to Real-Materials”</i>
	<i>Regular talk</i>
12:50 to 13:05	<b>Sirine Hértilli</b> , University of Monastir, Tunisia <i>“Investigation of Electronic and Nonlinear Optical Properties of a Spheroidal Core/Shell Quantum Dot-Matrix System”</i>
13:05 to 14:00	<b>Lunch Break</b>
	<b>Chairmen: Sh. Kuroda / T. Baghdasaryan</b>
14:00 to 14:40	<i>Keynote talk</i>



	<b>Gabriel Bester</b> , Hamburg University, Germany <i>“Theoretical Approach for Phonon Effects on the Optical Properties of Semiconductor Nanostructures”</i>
	<i>Invited talk</i>
14:40 to 15:00	<b>Yevgeniy Mamasakhlisov</b> , Yerevan State University, Armenia <i>“The Polyelectrolyte with a Disorder over Short-Range Interactions”</i>
	<i>Regular talk</i>
15:00 to 15:15	<b>Vahagn Abgaryan</b> , A.I. Alikhanyan National Science Laboratory, Armenia <i>“On the Convex Structure of the Space of Absolutely Separable States”</i>
15:15 to 15:30	<b>Coffee Break</b>
	<i>Regular talk</i>
15:30 to 15:45	<b>Hayk Gevorgyan</b> , A.I. Alikhanyan National Science Laboratory, Armenia <i>“Deterministic Generation of Arbitrary Ultrasmall Excitation of Quantum Systems by Composite Pulse Sequences”</i>
	<i>Regular talk</i>
15:40 to 15:55	<b>Gagik Shmavonyan</b> , National Polytechnic University of Armenia, Armenia <i>“Tunable 2D Nanostriped Sheets, Nanostructures, Nanocomposites, Coatings and Devices Obtained by Surface Rubbing Technology”</i>
16:00 to 17:00	<b>Poster Session</b> <i>Library of RAU new building</i>

**Day 4: May 16 Chairmen: E. Hakobyan / G. Mantashian**

	<i>Industrial talk</i>
10:00 to 10:30	<b>Arpine Davtyan</b> , Enterprise Incubator Foundation, Armenia <i>“PMI: Programs and Opportunities”</i>
	<i>Industrial talk</i>
10:30 to 11:00	<b>Sofia Parsadanyan</b> , Stemma Scientific Innovation Consortium (SSIC), Armenia <i>“Technology Transfer and Commercialization”</i>
11:00 to 11:30	<b>Coffee Break</b>
	<i>Industrial talk</i>
11:30 to 12:00	<b>Marina Aghayan</b> , AIP Science / A.B. Nalbandyan Institute of Chemical Physics, Armenia <i>“Materials for Additive Manufacturing”</i>
	<i>Industrial talk</i>
12:00 to 12:30	<b>Sevak Sargsyan</b> , Center of Advanced Software Technologies, Armenia <i>“Center of Advanced Software Technologies”</i>
12:30 to 13:30	<b>Lunch Break</b>
	Session 1: Chairmen – Sargis Gavalajyan, Narek Yengibaryan, Arman Avetisyan      Session 2



<b>Celebration of the International day of light</b> <i>Science popular talks about Light</i>  <b>Venue:</b> RAU, <b>organizer:</b> RAU Radiant Minds Student Chapter <i>Parallel session</i>		<b>Visit to IChPh</b>  <b>Venue:</b> A.B. Nalbandyan Institute of Chemical Physics (IChPh) <i>Parallel session</i>
13:30 to 14:15	<b>Eduard Kazaryan</b> , Russian-Armenian University, Armenia <i>"The Life Path of the Basic Mathematical Constants"</i>	Transportation from RAU to IChPh
14:15 to 15:00	<b>Aram Papoyan</b> , Institute for Physical Research of NAS RA, Armenia <i>"Light Technologies in Our Life"</i>	Lab tour
15:00 to 15:15	<b>Coffee Break</b>	
15:20 to 16:10	<b>Vahram Mekhitarian</b> , Institute for Physical Research of NAS RA, Armenia <i>"3D Reality: Past, Present and Future"</i>	

**Day 5: May 17 Chairman: D. Hayrapetyan / P. Mantashyan**

10:00 to 11:00 Presentations of OPTICA, SPIE, EPS Young minds chapters of Armenia

11:00 to 11:30 Closing remarks and Award ceremony

11:30 to 13:00 Round-trip in the city center of Yerevan!

**Organizers and Sponsors**



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The event is organized by EC H2020 Twinning NanoQIQO project (GA No 952335)