



NanoQIQO: School on Optics and Photonics

15 – 20 May, 2023

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

| 15 May | | Chairman: D. Hayrapetyan/H. Sargsyan |
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| 9:00 to 9:30 | Registration | |
| 9:30 to 10:00 | Opening Ceremony | |
| 10:00 to 11:00 | Sotirious Baskoutas , Patras University, Greece Novel Nanomaterials: Challenges and Perspectives | |
| 11:00 to 11:30 | Coffee Break | |
| 11:30 to 12:30 | Nika Akopian , Technical University of Denmark, Denmark Multi-Qubit Photonic Devices | |
| 12:30 to 13:30 | Lunch Break | |
| 13:30 to 14:30 | Gabriel Bester , University of Hamburg, Germany Atomistic calculations of the optical properties of nanostructures | |
| 14:30 to 15:30 | Emanuel Paspalakis , Patras University, Greece (<i>online</i>) Quantum optical effects in hybrid structures at the nanoscale | |
| 18:00 to 21:00 | Welcome Dinner at Genacvale pandok* | |

* address: Papazyan 23, Yerevan; web-page: <https://genacvale.am/en/>



The school is organized by EC H2020 Twinning NanoQIQO project (Grant agreement No 952335).

16 May **Chairman: S. Baskoutas/P. Mantashyan**

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|----------------|---|
| 10:00 to 11:00 | Michael Sigalas , Patras University, Greece Phononic Crystals: Controlling Elastic waves from nanometers to meters |
| 11:00 to 11:30 | Coffee Break |
| 11:30 to 12:15 | David Hayrapetyan , Russian-Armenian University, Armenia, Effect of Gaussian and Bessel laser beams on linear and nonlinear optical properties of vertically coupled cylindrical quantum dots |
| 12:15 to 12:30 | Group Photo |
| 12:30 to 13:30 | Lunch Break |
| 13:30 to 14:30 | Christos Garoufalis , Patras University, Greece Optical properties and electronic structure of perovskite nanoparticles from first principles calculation |
| 14:30 to 15:30 | Torben Steenbock , University of Hamburg, Germany Surfaces as a key factor for understanding the optical properties of CdSe nanocrystals |
| 15:30 to 16:30 | Hayk Sargsyan , Russian-Armenian University, Armenia Exactly solvable models for pair interacting gas in quantum dots |

17 May **Chairman: G. Bester/Ch. Garoufalis**

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|----------------|---|
| 10:00 to 11:00 | Ebrahim Karimi , University of Ottawa, Canada Structured Photons: Secure communications, Quantum Imaging and Photonics Simulators |
| 11:00 to 11:30 | Coffee Break |
| 11:30 to 12:30 | Zaiping Zeng , Henan University, China Modelling semiconductor quantum dots using large-scale density functional theory |
| 12:30 to 13:30 | Lunch Break |

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| 13:30 to 14:30 | Carlos Duque , Universidad de Antioquia, Colombia Theoretical modeling of excitons in conical-shaped heterostructures obtained via droplet epitaxy technique |
| 14:30 to 15:30 | Spyros Kosionis , Patras University, Greece (<i>online</i>) Resonance fluorescence and photon statistics in coupled quantum-photon nanostructures |
| 15:30 to 16:30 | George Kalosakas , Patras University, Greece Strain and temperature dependence of the Raman G-band of graphene |

18 May Chairman: N. Yengibaryan/S. Gavalajyan

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| 10:00 to 10:30 | Levon Hovhannisyan , Microsoft Corporation Introduction to Azure Quantum |
| 10:30 to 11:00 | Coffee Break |
| 11:00 to 12:00 | Jayakumar Vaithiyashankar , IBM Quantum Educator at Presidency University, India (<i>online</i>) Qiskit -Quantum Computing Framework - Hands-on |
| 12:00 to 12:30 | David Khachatryan , Parity Quantum Computing GmbH, Austria (<i>online</i>) Quantum Optimization and its Problems |
| 12:30 to 13:00 | Tigran Dadalyan , Azalea Vision, Belgium (<i>online</i>) See the world through Azalea Vision Lens |
| 13:00 to 14:00 | Lunch Break |
| 14:00 to 15:00 | Students Talks |

19 May Chairman: G. Mantashyan/A. Kostanyan

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| 10:00 to 11:00 | Giles Brandon , Intelligentsia Consultants, Luxemburg Horizon Europe funding opportunities and proposal writing for young researchers: Part 1 |
| 11:00 to 11:30 | Coffee Break |

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| 11:30 to 12:30 | Giles Brandon , Intelligentsia Consultants, Luxemburg Horizon Europe funding opportunities and proposal writing for young researchers: Part 2 |
| 12:30 to 13:30 | Lunch Break |
| 13:30 to 14:30 | Dilara Shayegan , University of Hamburg, Germany Profiling The University of Hamburg Case: External Funding Management (EU) |
| 14:30 to 15:30 | Hans Behringer , University of Hamburg, Germany (<i>online</i>) Hamburg Research Centre for Ultrafast Imaging: Electrons, atoms and molecules in slow motion |

20 May

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| 10:00 to 10:30 | Paytsar Mantashyan , Russian-Armenian University, Armenia Talbot Effect in Quantum Dots Ensemble |
| 10:30 to 11:00 | Astghik Kuzanyan , Institute for Physical Research, Armenia Thermoelectric Photodetectors |
| 11:00 to 11:30 | Anna Ovvyan , University of Münster, Germany (<i>online</i>) Cavity Enhanced Hybrid Nanophotonic Circuits with Integrated Single Photon Sources |
| 11:30 to 13:00 | Award and Closing Ceremony |
| 13:00 to 17:00 | Social Event: Trip to Khor Virap Monastery |

Organizers and Sponsors



Contacts: nano@rau.am, + (374) 93 93 43 11; **Venue:** Hovsep Emin 123, 0051, Russian-Armenian University, new building 7th floor, Lecture Hall named after H. Orbeli



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