

# School on Quantum Optical Technologies: Quantum Communication and Quantum Sensors

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Alexander Sergienko  
Boston University, USA



The explosive development of quantum information and quantum technology applications over the last two decades has clearly indicated that the second quantum revolution is underway. It is characterized by a rapid growth of practical applications of basic quantum theory principles discovered a century ago by the first cohort of quantum mechanics founders. The purpose of this School is to bring together early career researchers and motivated students. It offers a series of specialized lectures focusing on fundamentals of quantum states of light and on the nature of quantum entanglement as the main resource for quantum technologies. The lectures will also address challenging problems of quantum entanglement engineering and specifics of its practical use in quantum communication and high-resolution sensing.

## Topics Covered

- Quantum Entanglement as a Central Element of Quantum Physics
- Quantum Optics and Modern Approaches to Engineering Photonics Entangled States
- Quantum Communication with Single-Photon and Entangled-Photon States
- Precise Quantum Measurement (Quantum Metrology) and High-Resolution Optical Sensors

**Organizer:** Alikram Nuhbalaoğlu (Director of TÜBİTAK TBAE)

**Deadline for Applications:** July 17, 2023