QUANTUM-M SUMMER SCHOOL

Quantum technologies in measurements



INFORMATION LETTER - INVITATION

3-4 September 2026, Tashkent region (Uzbekistan)

UZTR UZBEKISTAN AGENCY FOR TECHNICAL REGULATION

O'ZBEKISTON MILLIY METROLOGIYA INSTITUTI

Objectives:

- To explore the role of quantum technologies in enhancing measurement precision and traceability beyond classical limits.
- To discuss recent advancements in quantum-based standards, including atomic clocks, quantum sensors, and quantum electrical metrology.
- To promote the integration of quantum measurement techniques into national and international metrology systems
- To foster collaboration between research institutions, industry, and metrology organizations for the development and implementation of quantum metrology applications

Target Audience:

The conference targets researchers, metrology experts, engineers, academics, industry professionals engaged in quantum technologies and precision measurement.

Schedule:

September 3:

- Laboratory tour of the Uzbek National Institute of Metrology;
- Main scientific day (*opening and half day of scientific sessions from 14:00 Tashkent time*).

September 4:

- Main scientific day (*full day of scientific sessions from 10:00 Tashkent time*).

September 5:

- Practical Visit to the Physical-Technical Institute of the “Physics-Sun” Scientific Production Association of the Academy of Sciences of the Republic of Uzbekistan.

Connection details:

Meeting ID: 852 2786 4854
Passcode: 537405

Brief Overview:

Quantum metrology is one of the most promising areas of modern measurement science, using fundamental quantum phenomena and physical constants to achieve the highest levels of accuracy, stability, and reproducibility. Its development is becoming increasingly important for advanced industry, energy, telecommunications, digital technologies, medicine, navigation, and scientific research.

In recent years, Uzbekistan has placed particular emphasis on the development of quantum metrology. The country is steadily building modern scientific, technological, and metrological infrastructure, creating conditions for the integration of quantum technologies into the national measurement system, and strengthening cooperation with leading national metrology institutes, research centers, and international experts.

Key areas of this development include the establishment of advanced quantum measurement standards, high-precision time and frequency measurements, quantum electrical and optical metrology, as well as the training of highly qualified specialists. International cooperation, knowledge exchange, and the introduction of cutting-edge scientific solutions play an essential role in this process.

The **QUANTUM-M Summer School: Quantum Technologies in Measurements** is the first event of its kind in Uzbekistan dedicated to quantum metrology and quantum technologies in measurement. It will bring together scientists, metrologists, engineers, and international experts to exchange knowledge, discuss emerging technologies, and support the further development of quantum metrology in Uzbekistan.



Akmal Jumanazarov

Director

Uzbek Agency for Technical Regulation
under the Cabinet of Ministers

Akmal Jumanazarov presented the project to the President of the Republic of Uzbekistan, outlining its key objectives, expected outcomes, and significance for the further development of the technical regulation system in the country.



Lazizbek Saidoripov

First Deputy Director

Uzbek Agency for Technical Regulation
under the Cabinet of Ministers

Under the leadership of Lazizbek Saidoripov, work was initiated to establish modern infrastructure necessary for the effective implementation of the project and the further development of quantum metrology in the country.



Sheroz Ismatullaev

Director

Uzbek National Institute of Metrology

Sheroz Ismatullaev initiated negotiations with leading foreign countries and international organizations and began engaging prominent international experts to support the implementation of the project and the development of quantum metrology in Uzbekistan.



Albert Rigosi

Quantum Technologies in Measurement: Graphene for Quantum Electrical Standards

National Institute of Standards and Technology (NIST), USA

Albert F. Rigosi is an American physicist and quantum metrology expert serving as Deputy Division Chief at the U.S. National Institute of Standards and Technology (NIST). He holds a PhD in Physics from Columbia University and has authored more than 100 scientific publications and two patents. His research focuses on the quantum Hall effect, graphene, and quantum electrical resistance standards. He has an h-index of 37 and more than 10,000 citations.



Anvar Zakhidov

The topic of the presentation is being clarified

University of Texas, Dallas, USA

Anvar A. Zakhidov is a physicist and internationally recognized expert in nanotechnology, nanophotonics, and advanced materials. He serves as Deputy Director of the NanoTech Institute and Professor of Physics at The University of Texas at Dallas (UT Dallas). His research focuses on carbon nanostructures, photonic materials, solar cells, and optoelectronic technologies. He is also a Fellow of the American Physical Society (APS)



Nuriddin Raymjonov

The Quantum Metrology Center is a new stage in the formation of innovative metrological infrastructure in Uzbekistan

Uzbek National Institute of Metrology, Uzbekistan

Nuriddin Raymjonov is the Chief Metrologist at the Uzbek National Institute of Metrology (UzNIM). He specializes in metrology and international cooperation in the field of measurements.



Glen Bosman

The topic of the presentation is being clarified

ISO, Malaysia, Uzbekistan national bodies
Standardization Consultant

Glen Bosman is an international expert from the UK in the fields of standardization and technical regulation, as well as a World Bank expert providing advisory support to Uzbekistan on the institutional reform of the national standardization system, the development of technical committee operations, and the expansion of participation in ISO and IEC.



Dr. Petr Křen

Optical frequency and gravitational measurement standards

Czech metrology institute

Dr. Petr Křen is a metrologist at the Czech Metrology Institute (CMI), working in the Unit of Quantum Metrology of Length. He has more than 25 years of experience in metrology. His research focuses on optical frequency standards, interferometry, gravimetry, and general metrology. Since 2007, he has been involved in the Consultative Committee for Length (CCL) of the CIPM. He is the author of more than 40 scientific publications.

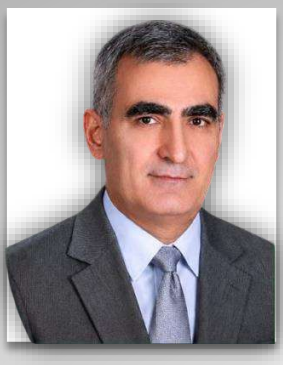


Sivinee Sawatdiaree

Quantum Metrology: Bridging Fundamental Measurement Science and Real-World Applications

National Institute of Metrology, Thailand

Dr. Sivinee Sawatdiaree is a Thai physicist and metrologist, serving as Head of the Electrical Metrology Department at the National Institute of Metrology (Thailand) (NIMT) since 2017. She specializes in quantum electrical metrology, including Josephson and quantum Hall standards, and holds a Dr. rer. nat. degree in Physics from Germany.



Ramiz Hamid

Quantum Metrology and Sensing

SASO-NMCC, Saudi Arabia

Assoc. Prof. Dr. Ramiz Hamid is a physicist and metrology expert, former Deputy Director of TÜBİTAK UME (National Metrology Institute of Türkiye) and currently a consultant at SASO-NMCC (Saudi Arabia). He specializes in time and frequency metrology, quantum measurements, laser and electromagnetic metrology.



Rustam Rajabov

Kinetic and magnetic properties of amorphous alloys based on 3d-metals

Samarkand State University, Uzbekistan

Rustam Rajabov is a physicist and researcher at Samarkand State University, Uzbekistan, specializing in magnetism, magnetic materials, and the kinetic and magnetic properties of alloys and intermetallic compounds. He holds a Candidate of Physical and Mathematical Sciences degree and has authored more than 100 scientific publications, as well as a monograph and educational materials.



Shavkat Yuldashev

Spintronics- modern type of nanoelectronics

National University of Uzbekistan

Shavkat Yuldashev is a Doctor of Physical and Mathematical Sciences and Professor at the National University of Uzbekistan named after Mirzo Ulugbek, specializing in semiconductor physics, nanostructures, and functional materials. He leads a laboratory at the Nanotechnology Development Center and conducts research on semiconductor nanostructures, topological insulators, and their physical properties.



Dilnoza Muxamediyeva

The future of artificial intelligence in the age of quantum technologies

“TIIAME” National Research University, Uzbekistan

Dilnoza Muxamediyeva is a Doctor of Technical Sciences and Professor at “TIIAME” National Research University, Uzbekistan, specializing in digital technologies and artificial intelligence. Her research focuses on fuzzy logic, intelligent systems, mathematical modeling, data processing, and artificial intelligence technologies. She is a professor at the Department of Digital Technologies and Artificial Intelligence and is actively engaged in scientific research and the development of advanced computational methods.



Abdulaziz Mavlyanov

Principles of Quantum Computer Operation

Research Institute of Semiconductor Physics and Microelectronics, Uzbekistan

Deputy Director for Scientific Affairs and Innovations, Research Institute of Semiconductor Physics and Microelectronics under the National University of Uzbekistan named after Mirzo Ulugbek



Umedjon Khalilov

Computational insights into quantum carbon nanostructures

Academy of Sciences of the Republic of Uzbekistan

Dr. Umedjon Khalilov is a computational materials scientist, serving as Head of the Lab at the Academy of Sciences of the Republic of Uzbekistan. He specializes in atomistic simulations of nanostructure synthesis/characteristics and beyond. He holds a PhD from the University of Antwerp (Belgium).



Makhmudov Khikmat

Methods and Techniques for Disseminating the UTC(UZ) Time Scale

Uzbek National Institute of Metrology, Uzbekistan

Khikmat Makhmudov — Doctor of Technical Sciences (DSc), specialist in metrology and ionizing radiation measurements, Uzbekistan.



Bakhtiyor Baizakov

Single impurity atom embedded in a dipolar two-soliton molecule as a qubit

S.A. Azimov Institute of Physics and Technology, Uzbekistan

Head of the Laboratory of Theoretical Physics at the S.A. Azimov Physical-Technical Institute of the Academy of Sciences of Uzbekistan. He specializes in theoretical physics, nonlinear optics, quantum optics, and soliton dynamics.



Natalia Amurova

Quantum Metrology as a New Safety Standard for Smart Energy Systems

Tashkent University of Information Technologies

Natalya Yuryevna — Engineer and PhD in Technical Sciences. Specializes in power supply, safe operation of power systems, and green technologies. In his research and teaching activities, he focuses on energy sector development, including issues related to precision measurements, standardization, and reliability.



Alisher Nurimov

Quantum Dots: Harnessing Quantum Effects for Next-Generation Technologies

Samarkand State University

Alisher Nurimov — PhD candidate at Samarkand State University, conducting research under Anvar Zakhidov at the Samarkand Quantum Center on perovskite quantum dot-based optoelectronic devices. Has completed research internships in Türkiye, Kazakhstan, and at the Russian Quantum Center, and is currently undertaking an internship at The University of Texas at Dallas.



Iroda Saydullaeva

Quantum Dot Science and Engineering: Current Progress and Future Trajectories

The Institute of Engineering Physics at Samarkand State University

Iroda Saydullaeva is a research scientist and lecturer with over 10 years of experience in molecular biology, nanotechnology, and biophysics. She currently works as a Senior Scientist/Lecturer at Samarkand State University and SolQD. She holds a PhD in Bioengineering from Ege University, Türkiye, and has published research in nanotechnology and biomedical sciences.

Event venue information





Address: Uzbekistan, Bostanlyk District, Chimyonlik, Aktash

+998 98 880 40 04

+998 98 880 04 04

contact@greenhills.uz

Location:
https://www.google.com/maps/place/GREEN+HILLS+Resort/@41.6390625,69.8151875,843m/data=!3m2!1e3!4b1!4m9!3m8!1s0x38af19b6d2e0cacb:0xb060787f2a7ca15a!5m2!4m1!1i2!8m2!3d41.6390625!4d69.8151875!16s%2Fg%2F11s1t5nm4z?entry=ttu&g_ep=EgoyMDI2MDMyMy4xIKXMDSoASAFQAw%3D%3D

Responsible for organizing the event:

- Akhmadbek **ERGASHEV** (interdep@nim.uz; interdep.uznim@gmail.com; Calls/WA: +998-99-880-28-43)
- Sheroz **ISMATULLAEV** (sh.ismatullaev@nim.uz; Calls/WA: +998-98-305-26-00)
- Ruslan **VALIEV** (r.valiev@nim.uz; Calls/WA: +998-98-444-70-88)