Opening Ceremony

The International Year of Quantum Science and Technology (IYQ 2025)

Tuesday 4 and Wednesday 5 February 2025

UNESCO HQ Room I & Room II

Room I&II *French/English/Spanish interpretation is available, and the event will be webcast*

The importance of Quantum Science and its applications in achieving Agenda 2030 and its 17 Sustainable Development Goals was highlighted by Resolution A/RES/78/287, adopted by the United Nations General Assembly on 7 June 2024, proclaiming 2025 as the "International Year of Quantum Science and Technology (IYQ)." This follows Resolution 216 EX/37, adopted by the Executive Board of UNESCO on 14 April 2023.
As the lead agency for IYQ, UNESCO, along with its partners, is organising the opening ceremony and preparing for the year's activities. These events will emphasise the significance of quantum science, foster international and interdisciplinary cooperation, and focus on sustainable development applications, featuring inspiring keynote addresses, engaging panel discussions, and cultural performances to celebrate this milestone in science and technology.

Day 1
4 February 2025
Room I

09:00-10:00 Registration, coffee

10:00-10:55 Introductory session

The opening session will set the tone for the International Year of Quantum Science and Technology, emphasizing the significance of quantum advancements in shaping our future. Leaders and experts will highlight the global importance of fostering innovation and international collaboration.

10:00-10:05 **Promotional Video of the International Year**

10:05-10:10 **Opening**
Ms Hayley Edmonds, master of ceremony

10:10-10:20 **Welcome Address**
Ms Lidia BRITO, Assistant Director-General for Natural Sciences at UNESCO

10:10-10:25	**High-Level Remarks** Minister of Science, Humanities, Technology and Innovation of the United Mexican States*(tbc)* **H.E. Amb. Simona-Mirela Miculescu**, President of the 42nd session of the General Conference **Mr Cephas Adjej MENSAH**, Director of Research, Statistics and Information Management, on behalf of the Minister for Environment, Science, Technology and Innovation of the Republic of Ghana
10:25-10:55	**Keynote Address** "Watching The Quantum World With Ultrashort Light Pulses" **Prof. Anne L'HUILLIER**, Physicist and 2023 Nobel Laureate in Physics, Sweden/France

10:55-11:00	**Group Photo**

11:00-11:50	**Fireside Chat: Shaping a Sustainable Future for Global Development**

This engaging fireside chat will delve into the ways quantum technologies can contribute to a more inclusive and equitable world. Panelists will discuss strategies to bridge the global divide and ensure that the benefits of quantum advancements are shared widely.

Moderator: Ms Catarina ROLFSDOTTER-JANSSON, journalist, Moderator, TV-program host, Sweden

- **Ms Samia Charfi KADDOUR**, Professor of Physics at the Faculty of Science of Tunis, University of Tunis El Manar; former Director General of Scientific Research at the Ministry of Higher Education and Scientific Research; Tunisia
- **Prof. Ana Maria CETTO,** Professor at the Institute of Physics, the Director of the Museum of Light at the National University of Mexico, the United Mexican States
- **Prof. John DOYLE**, Henry B. Silsbee Professor of Physics at Harvard University, President of the American Physical Society; the United States of America

11:50-12:40	**Roundtable Discussion: Pushing the Frontiers of Quantum Science and Technology**

Discover groundbreaking research and innovations that are pushing the boundaries of quantum science. This discussion will highlight the latest advancements and how they are shaping tomorrow's technologies.

Moderator: Ms Maricela MUNOZ, Director External Affairs, Geneva Science and Diplomacy Anticipator (GESDA), Switzerland

- **Dr Dave SMITH,** National Technology Adviser, on behalf of the Minister of State for Science, Research and Innovation, United Kingdom of Great Britain and Northern Ireland
- **Prof. Alain ASPECT,** Physicist and 2022 Nobel Laureate in Physics, France
- **Prof. Stephanie SIMMONS**, Founder & Chief Quantum Officer at Photonic, Co-Chair of Canada's National Quantum Advisory, Canada
- **Prof. Jian Wei PAN**, Academician of the Chinese Academy of Sciences; Vice Chancellor, University of Science and Technology of China, China

12:40-12:50	**Music Performance**
12:50-14:00	**Lunch**

Hall Segur, le Foyer and the Restaurant on the 7th floor of the UNESCO

14:00 -14:50	**Panel Discussion: Public Engagement and Education in Quantum Science and Technology**

Explore the critical role of public engagement and education in demystifying quantum science and inspiring the next generation. Panelists will discuss initiatives that make quantum concepts accessible to diverse audiences and highlight the importance of inclusivity in science education.

Moderator: Prof. Emily EDWARDS, Associate Research Professor in the Department of Electrical and Computer Engineering, and Duke Quantum Center, United States of America

- **Prof. Andrzej SZEPTYCKI**, Undersecretary of State, Ministry of Science and Higher Education of Poland
- **Prof. Jacquiline ROMERO**, Associate Professor, Reader and Westpac Research Fellow, School of Mathematics and Physics, University of Queensland Australia/the Republic of the Philippines.
- **Dr Yaseera ISMAIL**, Senior lecturer, Department of Physics at Stellenbosch University, South Africa
- **Ms Elisa Torres DURNEY**, CEO of Girls in Quantum; Chile
- **Dr John DONOHUE**, Senior Manager of Scientific Outreach at the Institute for Quantum Computing, University of Waterloo; Canada

14:50-15:40	**Roundtable Discussion: Policy and Innovation in Quantum Science for Advancing Global Goals for Sustainable Development**

This session will explore how policies and innovation in quantum science can be aligned with the United Nations' Sustainable Development Goals. The discussion will focus on harnessing quantum advancements for climate action, economic growth, and societal well-being.

Moderator: Prof. Luiz DAVIDOVICH, Professor Emeritus at the Federal University of Rio de Janeiro; Distinguished fellow at the Institute for Quantum Science and Engineering of the University of Texas A&M, Brazil

- **Mr. Seizo ONOE,** Director, Telecommunication Standardization Bureau, International Telecommunication Union
- **Prof. Serge HAROCHE**, Physicist and 2012 Nobel Laureate in Physics, France
- **Dr Najwa AARAJ,** CEO of Technology Innovation Institute, UAE
- **Prof. Tommaso CALARCO**, Director of the Institute for Quantum Control in Jülich, Coordinator of EU Quantum Flagship; Germany/Italy
- **Dr Cathy FOLEY,** Board member of the Commonwealth Scientific and Industrial Research Organisation of Australia

15:40-16:35	Networking Session

Coffee Break

16:35-17:05	Insight Talk by Nobel Laureate on Quantum Mechanics 2025: Incredible Past, Amazing Present, Magnificent Future

Be inspired by the insights of Prof. William D. Phillips, 1997 Nobel Laureate in Physics, as he shares his unique perspective on the wonders of quantum science. This engaging session allows attendees to interact with one of the field's most esteemed figures.

Moderator: Prof. Rosario FAZIO, Head of the Condensed Matter and Statistical Physics Section, the Abdus Salam International Centre for Theoretical Physics

Speaker: Prof. William D. PHILLIPS, Physicist and 1997 Nobel Laureate in Physics, United States of America

17:05-18:05	Voices from the Industry: The Challenge of Developing Quantum at Scale

This panel will address the challenges and opportunities of scaling quantum technologies for practical use. Industry leaders will share their experiences in bringing quantum research to market, showcasing groundbreaking developments in this field.

Moderator: Dr. Celia MERZBACHER, Executive Director of the Quantum Economic Development Consortium (QED-C)

- **Ms Katie PIZZOLATO,** Vice President of Quantum Algorithms and Scientific Partnerships, IBM
- **Dr Krysta SVORE,** Technical Fellow, Microsoft
- **Dr Rajeeb HAZRA,** CEO of Quantinuum
- **Dr Grégoire RIBORDY,** CEO of ID Quantique

- **Prof. Alexander LING,** Principal Investigator, Centre for Quantum Technologies, Associate Professor, Department of Physics, Faculty of Science, National University of Singapore; Co-founder of SpeQtral & S-Fifteen Instruments, Singapore.
- **Dr Takuya Kitagawa,** President, QuEra

18:05-18:25	UNESCO's Role in Reducing the Quantum Divide: Advancing Global Innovation and Inclusion

This session highlights UNESCO's commitment to reducing the global quantum divide by fostering innovation, building capacities, and advancing inclusion between the Global North and South. It emphasizes the transformative potential of quantum science and technology while ensuring its ethical and responsible applications. By bridging technical gaps and promoting equity, UNESCO reaffirms its dedication to leveraging quantum technologies for sustainable and inclusive development.

Host: Ms Lidia BRITO, Assistant Director-General for Natural Sciences, UNESCO

Ms Dafna FEINHOLZ, Director a.i. Division of Research, Ethics and Inclusion, Social and Human Sciences Sector, UNESCO
Mr. Guilherme CANELA DE SOUZA GODOI, Director of Division for Digital Inclusion and Policies and Digital Transformation (CI/DPT) and Secretary of the Information for All Programme (IFAP), Communication and Information Sector, UNESCO
Mr Atish DABHOLKAR, Director of the Abdus Salam International Centre for Theoretical Physics, UNESCO

18:25-18:30	Day one Concluding Notes

Sir Peter KNIGHT, Professor, Blackett Laboratory, Imperial College London, Chair of the Quantum Metrology Institute, National Physical Laboratory, co-chair of the Steering Committee of the International Year of Quantum Science and Technology, United Kingdom of Great Britain and Northern Ireland

Day 2
5 February 2025
Room II

09:00-09:30 Welcome Coffee

09:30-09:45 Introductory Session

Begin the day with reflections on the importance of ethics in quantum science and its role in shaping responsible innovation and inclusive governance, setting the tone for the day's discussions.

09:30-09:35 **Welcome address by the Master of Ceremonies**
Ms Hayley EDMONDS, journalist, France

09:35-09:40 **Introductory remarks (video meesage)**
Ms Gabriela RAMOS, Assistant Director-General of Social and Human Sciences, UNESCO

09:40-09:45 **Scene Setting Allocution**
Prof. Yasser OMAR, Theoretical Physicist, IST, University of Lisbon & President of PQI – Portuguese Quantum Institute

09:45-10:45 Panel Discussion: Ethics of Quantum Technologies

This panel will explore the ethical challenges of quantum advancements and the need for an anticipatory approach and a global reflection to understand the potential benefits and risks of these powerful technologies. Panelists will discuss why an ethical and human rights-based framework is essential to ensure ethical guardrails while enabling responsible innovation.

09:45-09:50 **Scene Setting Allocution**
Prof. Pieter VERMAAS, Philosopher and Head of the Quantum Lab, Faculty of Technology, Policy and Management of TU Delft, and Lead of ethics research, Dutch Quantum Delta, Kingdom of the Netherlands

09:50-10:35 **Panel Discussion**

Moderator: **Mr Diederick CROESE,** Director of the Centre for Quantum and Society, Quantum Delta NL, Kingdom of the Netherlands

- **Prof. Emma RUTTKAMP-BLOEM,** Professor and Head of the Department of Philosophy, Faculty of Humanities at the University of Pretoria, Chairperson of the UNESCO World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), South Africa
- **Professor Sang Wook YI,** Professor of Philosophy, Hanyang University, Chairperson, Division of Ethics and Safety, National High-Level Committee for AI Strategies,

Rapporteur of the UNESCO World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), Republic of Korea

- **Prof. Karina Garay PALMETT,** Senior Researcher, Department of Optics of the Division of Applied Physics of the Center for Scientific Research and Higher Education at Ensenada, the United Mexican States
- **Prof. Shohini GHOSE,** Professor of Physics and Computer Science at Wilfrid Laurier University and Chief Technology Officer, Quantum Algorithms Institute, Canada
- **Prof. Anil PRABHAKAR**, Professor at the Indian Institute of Technology, Madras, and Co-Founder of QuNu Labs and Quanfluence, India

10:35-10:45 **Q&A session**

10:45-11:10	**Coffee Break**
11:10-12:10	**Panel Discussion: Responsible Quantum Innovation**

This panel will discuss strategies, challenges, and opportunities for integrating responsibility into the research and deployment of quantum technologies. Panelists will focus on concrete ways to create responsible and inclusive innovation systems and how open-source applications can be promoted to prevent further widening digital divides.

11:05-11:10 **Scene Setting Allocution**

Prof. Matthias C. KETTEMANN, Professor of Innovation, Theory and Philosophy of Law, University of Innsbruck, and Director of the Innsbruck Quantum Ethics Lab, Member of the UNESCO World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), Republic of Austria

11:10-12:00 **Panel Discussion**

Moderator: **Mr Diederick CROESE,** Director of the Centre for Quantum and Society, Quantum Delta NL, Kingdom of the Netherlands

- **Dr Mira Luca WOLF-BAUWENS,** Responsible Quantum Computing Lead in the Responsible & Inclusive Technology Team, IBM Research, Switzerland
- **Dr. Prince OSEI,** Lead Scientist & Director for Quantum Leap Africa, President of the African Institute for Mathematical Sciences, Ghana
- **Prof. Farida FASSI,** Professor of Physics at the Faculty of Sciences, Mohammed V University in Rabat, Member of African Academy of Sciences, Morocco
- **Prof. Matthias C. KETTEMANN,** Professor of Innovation, Theory and Philosophy of Law, University of Innsbruck, and Director of the Innsbruck Quantum Ethics Lab, Member of the UNESCO World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), Republic of Austria

- **Prof. Yasser OMAR,** Theoretical Physicist, IST, University of Lisbon & President of PQI – Portuguese Quantum Institute

12:00-12:10 **Q&A session**

12:10-12:30 Closing of Day 2 and the Launch of the International Year

Celebrate the successful completion of Day 2 of the Opening Ceremony and the launch of the International Year of Quantum Science and Technology with reflections from UNESCO's leadership and closing cultural performances. Final remarks will emphasise the global importance of quantum advancements and the collaborative efforts needed to harness their full potential.

12:10-12:15 **Concluding notes of Day Two**
Ms Claudia REINPRECHT, Focal point of the Austrian Ministry of Foreign Affairs in digital and tech diplomacy and for the EU Digital Diplomacy Network, Republic of Austria

12:15-12:25 **Closing of the Launch of the International of the Year Quantum Science and Technology**
Ms Dafna FEINHOLZ, Director a.i. Division of Research, Ethics and Inclusion, Social and Human Sciences Sector, UNESCO
Ms Lidia BRITO, Assistant Director-General of Natural Sciences, UNESCO

Side-Exhibition

An exhibition for the IYQ will be held on Salle des Actes and Salle des Pas Perdus.