QUANTUM INNOVATION 2025 OSAKA

Program Book

Date
July 29th – August 2nd, 2025

Venue
Congrès Square Grand Green Osaka

INTERNATIONAL YEAR OF Quantum Science and Technology

QIH Quantum Innovation Hubs

https://www.qi2025.jp

QUANTUM INNOVATION 2025

The International Symposium on Quantum Science,
Technology and Innovation

Welcome Message

Welcome to Quantum Innovation 2025

The International Symposium on Quantum Science, Technology and Innovation 2025 (Quantum Innovation 2025) is organized by research institutes and universities of the Quantum Technology Innovation Hubs (QIH https://qih.riken.jp/en/) and is supported by the Government of Japan, the Japan Science and Technology Agency (JST), and corporate sponsors.

Quantum Innovation covers a wide range of topics, including the latest achievements, trends, and demands in quantum science and technology, such as quantum computing, quantum sensing, and quantum cryptography and communication. Since 2021, it has been held annually as a three-day symposium in Tokyo.

In 2025, the symposium will be held for five days in Osaka, adding a two-day Moonshot session towards fault-tolerant quantum computing and a one-day SIP session towards the future quantum society. This event also presents a great opportunity to visit Osaka and the 2025 World Expo (https://www.expo2025.or.jp/en/).

The symposium is one of the IYQ (International Year of Quantum Science and Technology) Global Events and is a great opportunity to discuss the latest advances and prospects in quantum science and technology.

Professor Masahiro Kitagawa
General Chair,
Quantum Innovation 2025 Organizing Committee

Venue

Grand Hall 3

Grand Hall 2

Grand Hall 1

Poster 5

Anteroom1

Anteroom 2

Anteroom 3

Anteroom 4

Anteroom 5

Poster 2

Park Hall

2 1 3

Poster 1 / Exhibition

Room A

Room B

Room C

Room D

Room E

Room L

Quiet Works Area

Room H

Cloak Room

Room F

Room G

Room I

Room J

Room K

Exhibition

16
17
18
19
20
21

Poster 3

Poster 4

15 14 13 12 11   10 9 8 7 6 5 4

Exhibition

Registration
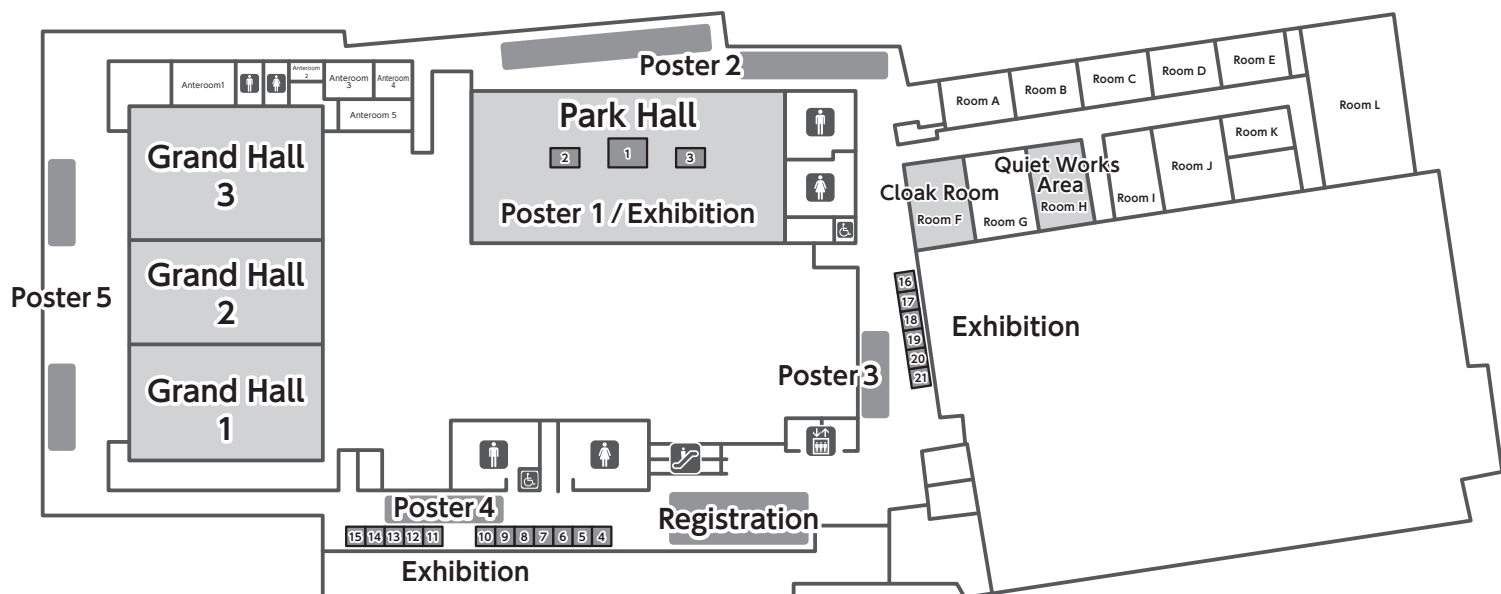
Exhibition

#		#	
1	FUJITSU LIMITED	12	KEYCOM Corporation
2	Bluefors	13	Autex Inc.
3	Deloitte Tohmatsu LLC	14	Japan Laser Corporation
4	HAMAMATSU PHOTONICS K.K.	15	Seiken Co., Ltd.
5	QuEL, Inc.	16	Japan Communication Equipment Co., Ltd.
6	Shimadzu Corporation	17	NTT Communications Corporation
7	LQUOM, Inc.	18	OHTAMA CO., LTD.
8	QunaSys Inc.	19	Yaqumo Inc.
9	Quantinuum	20	NIKI GLASS CO.,LTD
10	Quantum STrategic industry Alliance for Revolution	21	Royal Danish Embassy
11	OPTOQUEST CO., LTD.		

Wifi Connection Information

SSID: conger-square-ggo

Tue 29 July

	Oral Session Hall 3	Oral Session Hall 2	Oral Session Hall 1	Poster 1 Exhibition		Poster 2-5 Exhibition
	Grand Hall 3	Grand Hall 2	Grand Hall 1	Park Hall 2	Park Hall 1	Hoyer/Lobby/ Corridor
8						
9				Poster Mounting Exhibition		Poster Mounting (Group1) Exhibition
10	**Opening Remarks** 10:10-10:40 **PL-01 Opening**					
11	10:40-12:00 **PL-02 Global Quantum Ecosystem**					
12	12:00-13:40 **Lunch Break & Networking**			Exhibition Poster Viewing		Exhibition Poster Viewing (Group1)
13						
14	13:40-15:10 **PL-03 Policy**	13:40-15:10 **CP-01 Quantum Algorithms and Foundation**	13:40-15:10 **SE-01 Optical Quantum Sensing**			
15	15:10-15:30 **Break**					
16	15:30-17:00 **PL-04 Industry**	15:30-17:00 **CP-02 Practical Quantum Computing**	15:30-17:00 **CC-01 Quantum Communication**			
17				**Exhibition Reception** 17:10-17:50 **Poster Session（Odd No.）**		**Exhibition Reception** 17:10-18:30 **Poster Session（Group1）**
18				17:50-18:30 **Poster Session （Even No.）**		
19						

CP: Quantum Computing
SE: Quantum Sensing
CC: Quantum Cryptography & Communication

Wed 30 July

	Oral Session Hall 3	Oral Session Hall 2	Oral Session Hall 1	Poster 1 Exhibition		Poster 2-5 Exhibition
	Grand Hall 3	Grand Hall 2	Grand Hall 1	Park Hall 2	Park Hall 1	Hoyer/Lobby/ Corridor

Time	Hall 3	Hall 2	Hall 1	Poster 1	Poster 2-5
8				Exhibition Poster Viewing	Exhibition Poster Viewing (Group1)
9	8:40-10:10 **CP-03** **QC with Ions, Atoms and Photons: part1**	8:40-10:10 **SE-02** **Hyperpolarization Method**	8:40-10:10 **CC-02** **Progress and Prospects on Quantum Cryptography**		
10	10:10-10:30 **Break**				
11	10:30-12:00 **CP-04** **QC with Ions, Atoms and Photons: part2**	10:30-12:00 **SE-03** **Quantum Life / Hyperpolarized Application**	10:30-12:00 **CC-03** **Standardization and Certificate of QKD and PQC**		
12	12:00-13:40 **Lunch Break & Networking**				**Poster Removal (Group1)**
13					**Poster Mounting (Group2)**
14	13:40-15:10 **CP-05** **Superconducting QC**	13:40-15:10 **SE-04** **Solid-State/Nano Quantum Sensing (1)**	13:40-15:10 **CC-04** **Free-Space Quantum Key Distribution**		**Exhibition Poster Viewing (Group2)**
15	15:10-15:30 **Break**				
16	15:30-17:00 **CP-06** **Semiconductor QC**	15:30-17:00 **SE-05** **Solid-State/Nano Quantum Sensing (2)**	15:30-17:00 **CP-07** **Quantum Annealing**		
17				**Exhibition Reception**	**Exhibition Reception**
				17:10-17:50 **Poster Session （Even No.）**	17:10-18:30 **Poster Session （Group2）**
18				17:50-18:30 **Poster Session （Odd No.）**	
19					

CP: Quantum Computing
SE: Quantum Sensing
CC: Quantum Cryptography & Communication

Thu 31 July

	Oral Session Hall 3	Oral Session Hall 2	Oral Session Hall 1	Poster 1 Exhibition		Poster 2-5 Exhibition
	Grand Hall 3	Grand Hall 2	Grand Hall 1	Park Hall 2	Park Hall 1	Hoyer/Lobby/ Corridor

Time	Hall 3	Hall 2	Hall 1	Park Hall 2	Hoyer/Lobby/Corridor
8				**Exhibition** **Poster Viewing**	**Exhibition** **Poster Viewing (Group2)**
9	8:40-10:10 **JT-01(CP+SE)** **Quantum Sensing, Biology and Computing**		8:40-10:10 **CC-05** **Social Implementation of Quantum Communication**		
10	10:10-10:30 **Break**				
11	10:30-12:00 **JT-02(CC+CP)** **Quantum Communication and Computation**		10:30-12:00 **SE-06** **Atomic/Ion Quantum Sensing**		
12	12:00-13:40 **Lunch Break & Networking**				**Poster Removal (Group2)**
13					
14	13:40-15:10 **PL-05** **IYQ Keynotes** *Available via live online streaming and on-demand viewing			**Exhibition Removal**	**Exhibition Removal**
15	15:10-15:20 **Break**				
	15:20-15:30 **Quantum Art Exhibition**				
16	15:30-17:00 **PL-06** **IYQ Keynotes** *Available via live online streaming and on-demand viewing				
17				**Poster Removal**	
18	18:00-20:00 **Banquet at the Garden Oriental Osaka**				
19					

CP: Quantum Computing
SE: Quantum Sensing
CC: Quantum Cryptography & Communication

QUANTUM INNOVATION 2025

Fri 1 August

SIP3 special session	MS6 Session
Grand Hall 3	Grand Hall 2＋Grand Hall 1

8:40-8:55 Opening

8:55-10:05
SP-01
Quantum Security and Network

8:40-8:55 Opening

8:55-10:25
MS-01*
Fault-tolerant Quantum Computing

10:05-10:20 Break

10:20-11:30
SP-02
Quantum Computing

10:25-10:45 Break

10:45-11:45
MS-01*
Fault-tolerant Quantum Computing

11:30-13:00
Lunch Break & Networking

11:45-13:15
Lunch Break & Networking

13:00-14:10
SP-03
Innovation Creation Platform

13:15-14:10
MS-02*
Quantum Computing (Superconductinig)

14:10-14:25 Break

14:25-15:25
SP-04
Quantum Sensing

14:10-14:30 Break

14:30-16:15
MS-03*
Quantum Computing (Neutral Atom)

15:25-15:30
Closing

16:15-16:35 Break

16:35-17:30
MS-04*
Quantum Computing (Trapped ion)

Sat 2 August

MS6 Session
Grand Hall 2＋Grand Hall 1

8:40-10:25
MS-05*
Quantum Computing (Semiconductor)

10:25-10:45 Break

10:45-11:40
MS-06*
Quantum Computing (Photon)

11:40-13:10
Lunch Break & Networking

13:10-14:40
MS-07*
Quantum Communication and Network

14:40-15:00 Break

15:00-16:00
MS-07*
Quantum Communication and Network

16:00-16:10
Closing

*Available via live online streaming

Program

July 29

Grand Hall 1+2+3

	Session / Presentation	Chairperson# / Presenter	Affiliation
10:00-10:10	**OP. Opening Remarks**	**Masahiro Kitagawa**	**General Chair, Quantum Innovation 2025 Organizing Committee**
	PL-01. Opening	**Masashi Kawasaki #**	**RIKEN**
10:10-10:15	Welcome Message	Tetsuro Fukunaga	Cabinet Office, Government of Japan
10:15-10:20	Welcome Message (video message)	Yoshimasa Hayashi	Chairperson, Parliamentary Association for Quantum Technology Promotion
10:20-10:25	Welcome Message (video message)	Seiji Kihara	Chairperson, Quantum Industry Creation Project Team
10:25-10:35	PL-01-5. The Quantum Europe Strategy: A Global Outlook and Opportunities for EU–Japan Cooperation	Oscar Diez	European Commission
	PL-02. Global Quantum Ecosystem	**Kazuya Masu #**	**G-QuAT, AIST**
10:40-12:00	Panel Discussion	Taro Shimada	Q-STAR, Toshiba
		Ditte Bjerregaard	Ministry of Foreign Affairs of Denmark
		Ling Keok Tong	Singapore's National Quantum Office (NQO)
		Jonathan Legh-Smith	UK Quantum
		TBA	TBA
12:00-13:40	**Lunch Break & Networking**		

Grand Hall 3

	Session / Presentation	Chairperson# / Presenter	Affiliation
	PL-03. Policy	**Masashi Kawasaki #**	**RIKEN**
13:40-13:55	PL-03-1. TBA	Daisuke Kawakami	Cabinet Office, Government of Japan
13:55-14:10	PL-03-2. Denmark: A Quantum & Deep-Tech Harbour	Ditte Bjerregaard	Ministry of Foreign Affairs of Denmark
14:10-14:25	PL-03-3. Building the Quantum Workforce: Europe's Strategy for Skills, Education, and Inclusive Talent Pipelines	Oscar Diez	European Commission
14:25-14:40	PL-03-4. Singapore's National Quantum Strategy: Building Global Partnerships and Future-Ready Capabilities	Ling Keok Tong	Singapore's National Quantum Office (NQO)
14:40-14:55	PL-03-5. Superpositioned for Collaboration: The UK's National Quantum Technologies Programme	Marie-Louise Taylor	British Embassy Tokyo
		Najwa Sidqi	STFC, NQCC
14:55-15:10	PL-03-6. TBA	TBA	TBA

	Session / Presentation	Chairperson# / Presenter	Affiliation
15:10-15:30	**BREAK**		
	PL-04. Industry	**Shunsuke Okada #**	**Q-STAR**
15:30-16:00	Panel Discussion	Taro Shimada	Q-STAR, Toshiba
		Lisa Lambert	Quantum Industry Canada (QIC)
		Thierry Botter	European Quantum Industry Consortium (QuIC)
		Celia Merzbacher	QED-C
16:00-16:10	PL-04-1. Scalable Qubit Controller	Yosuke Ito	QuEL
16:10-16:20	PL-04-2. Advancing Toward FTQC: Practical Quantum Algorithm Initiatives	Yu-ichiro Matsushita	Quemix
16:20-16:30	PL-04-3. Building the Quantum Internet: LQUOM's Approach to Scalable Quantum Repeaters	Yuya Mochizuki	LQUOM
16:30-16:40	PL-04-4. Expanding Real-World Applications of Quantum Optimization: From Classical Solvers to Quantum Hardware Integration	Yu Yamashiro	Jij
16:40-16:50	PL-04-5. TBA	Tennin Yan	QunaSys
16:50-17:00	PL-04-6. QuEra Computing: Advancing Quantum with Neutral Atoms	Ayumu Imai	QuEra

Grand Hall 2

	Session / Presentation	Chairperson# / Presenter	Affiliation
	CP-01. Quantum Algorithms and Foundation	**François Le Gall #**	**Nagoya University**
13:40-14:10	CP-01-1. Classical Simulation of Non-Gaussian Quantum Circuits	Robert König	Munich Center for Quantum Science and Technology
14:10-14:40	CP-01-2. Reducing the Number of Qubits in Quantum Factoring	Clémence Chevignard	University of Rennes
14:40-15:10	CP-01-3. Generalized Quantum Stein's Lemma and Second Law of Quantum Resource Theories	Hayata Yamasaki	The University of Tokyo
15:10-15:30	**BREAK**		
	CP-02. Practical Quantum Computing	**Keisuke Fujii #**	**The University of Osaka**
15:30-16:00	CP-02-1. Sample-based quantum diagonalization for quantum chemistry calculations with classical and quantum computers	Mario Motta	IBM T.J. Watson Research Center
16:00-16:30	CP-02-2. Recent progress in early fault-tolerant quantum algorithms for eigenvalue problems	Lin Lin	University of California Berkeley
16:30-17:00	CP-02-3. Double-bracket quantum algorithms for ground-state preparation via cooling	Yudai Suzuki	École Polytechnique Fédérale de Lausanne (EPFL)

Grand Hall 1

	Session / Presentation	Chairperson# / Presenter	Affiliation
	SE-01. Optical Quantum Sensing	**Soyoung Baek #**	**Tohoku University**
13:40-14:10	SE-01-1. Imaging and sensing with "undetected photons": From a scientific curiosity to new measurement tools	Frank Kühnemann	Freiburg University
14:10-14:40	SE-01-2. Quantum-inspired classical optical metrology	Yoon-Ho Kim	Pohang University of Science and Technology
14:40-15:10	SE-01-3. Quantum sensing using entangled photons	Shigeki Takeuchi	Kyoto University
15:10-15:30	**BREAK**		
	CC-01. Quantum Communication	**Kae Nemoto #**	**OIST**
15:30-16:00	CC-01-1. Quantum Repeaters: Fermions or Bosons?	Peter van Loock	University of Mainz
16:00-16:30	CC-01-2. TBA	Tomoyuki Morimae	Kyoto University
16:30-17:00	CC-01-3. Our Recent Progress in Photonic Quantum Technologies Toward the Quantum Internet	Rikizo Ikuta	The University of Osaka

**8th IFQMS Joint Session

July 30

Grand Hall 3

	Session / Presentation	Chairperson# / Presenter	Affiliation
	CP-03. QC with Ions, Atoms and Photons: part1	**Shuntaro Takeda #**	**The University of Tokyo**
8:40-9:10	CP-03-1. Quantum Advantage with Continuous Variable Optical Systems	Ulrik Lund Andersen	Technical University of Denmark
9:10-9:40	CP-03-2. Optical Parametric Amplifiers based on PPLN waveguides for Continuous-variable Optical Quantum Computing	Takeshi Umeki	NTT
9:40-10:10	CP-03-3. Quantinuum's Trapped-Ion Quantum Computers	Brian Neyenhuis	Quantinuum
10:10-10:30	**BREAK**		
	CP-04. QC with Ions, Atoms and Photons: part2	**Takafumi Tomita #**	**Institute for Molecular Science**
10:30-11:00	CP-04-1. Universal Gate Set for Bosonic Logical Qubits in Mechanical Oscillators of Trapped Ions	Ting Rei Tan	The University of Sydney
11:00-11:30	CP-04-2. Benchmarking and Fault-Tolerant Operation of a Neutral Atom Quantum Processor	Thomas Noel	Infleqtion
11:30-12:00	CP-04-3. Development of Ytterbium Atom Tweezer Array For Quantum Computing	Yoshiro Takahashi	Kyoto University
12:00-13:40	**Lunch Break & Networking**		
	CP-05. Superconducting QC	**Yutaka Tabuchi #**	**RQC**
		Kunihiro Inomata #	**AIST**
13:40-14:10	CP-05-1. Challenges in Achieving Practical Quantum Computing	Shintaro Sato	Fujitsu, RIKEN
14:10-14:40	CP-05-2. Quantum computing from chips to applications at IQM	Juha Hassel	IQM Quantum Computers
14:40-15:10	CP-05-3. Imaging defects in live superconducting quantum circuits: revealing sources of decoherence	Sebastian de Graaf	National Physical Laboratory
15:10-15:30	**BREAK**		
	CP-06. Semiconductor QC	**Takahiro Mori #**	**AIST**
		Yusuke Kozuka #	**NIMS**
15:30-16:00	CP-06-1. Silicon Spin Qubits: Advances and Insights from SiGe and FDSOI Technologies	Elena Blokhina	Equal1 Laboratories
16:00-16:30	CP-06-2. Engineering Substrates to Accelerate the Quantum Leap	Cesar Road Neve	SOITEC
16:30-17:00	CP-06-3. Toward Stable Operation of Si Spin Qubits: Origin of Long-period Charge Fluctuation in Fin-type Quantum Dots	Hiroshi Oka	AIST

Grand Hall 2

	Session / Presentation	Chairperson# / Presenter	Affiliation
	SE-02. Hyperpolarization method**	**Nobuhiro Yanai #**	**The University of Tokyo**
8:40-9:10	SE-02-1. Quantum sensing with molecular systems	Ashok Ajoy	University of California Berkeley
9:10-9:40	SE-02-2. Nuclear Zeeman and Singlet State Relaxation from Experiment and Computation	Alexej Jerschow	New York University
9:40-10:10	SE-02-3. Crystal Engineering of Polarization Solids at Room Temperature	Munehiro Inukai	Tokushima University
10:10-10:30	**BREAK**		
	SE-03. Quantum Life / Hyperpolarized Application	**Shigeki Kiyonaka #**	**Nagoya University**
10:30-11:00	SE-03-1. Development of Hyperpolarized Carbon-13 Molecular Imaging for Novel Human Clinical-Research Studies	Daniel B. Vigneron	University of California San Francisco
11:00-11:30	SE-03-2. Shaping the Future of Clinical Metabolic Imaging with Hyperpolarized ^{13}C MRI	Arnaud Comment	GE HealthCare
11:30-12:00	SE-03-3. New Horizons in Hyperpolarized MRI using Quantum Technologies	Ilai Schwartz	NVision Imaging Technologies GmbH
12:00-13:40	**Lunch Break & Networking**		
	SE-04. Solid-State/Nano Quantum Sensing (1)**	**Norikazu Mizuochi #**	**Kyoto University**
13:40-14:10	SE-04-1. Nanoscale Quantum Sensing	Jörg Wrachtrup	University of Stuttgart
14:10-14:40	SE-04-2. About the electronic structure and charge state dynamics of nitrogen-vacancy centers in diamond	Ronald Ulbricht	Max-Planck Institute for Polymer Research
14:40-15:10	SE-04-3. Precision current comparator for AC and DC current ratio measurements using a nitrogen-vacancy center in a diamond	Yasutaka Amagai	AIST,G-QuAT
15:10-15:30	**BREAK**		
	SE-05. Solid-State/Nano Quantum Sensing (2)**	**Yuichi Yamazaki #**	**QST**
15:30-16:00	SE-05-1. Spin Defects in Low-Dimensional Materials for Quantum Sensing	Vladimir Dyakonov	Julius Maximilian University of Würzburg
16:00-16:30	SE-05-2. Harnessing Quantum Defects in Fluorescent Nanodiamonds for Semiconductor Applications	Huan-Cheng Chang	Academia Sinica
16:30-17:00	SE-05-3. Fluorescent nanodiamonds for thermal biology	Yoshie Harada	The University of Osaka

**8th IFQMS Joint Session

Grand Hall 1

	Session / Presentation	Chairperson# / Presenter	Affiliation
	CC-02. Progress and Prospects on Quantum Cryptography	**Go Kato #**	**NICT**
8:40-9:10	CC-02-1. Progress in Security Analysis of Practical Quantum Key Distribution	Norbert Luetkenhaus	University of Waterloo
9:10-9:40	CC-02-2. Entanglement in Science and Technology for Quantum Key Distribution	Akihisa Tomita	NICT
9:40-10:10	CC-02-3. A Security Framework for Quantum Key Distribution	Kiyoshi Tamaki	University of Toyama
10:10-10:30	**BREAK**		
	CC-03. Standardization and Certification of QKD and PQC	**Masahide Sasaki #**	**NICT**
10:30-10:50	CC-03-1. Standardisation and Assurance of Quantum Security Technologies	Martin Ward	Toshiba Europe
10:50-11:10	CC-03-2. Recent Developments in Post-Quantum Cryptography	Tsuyoshi Takagi	The University of Tokyo
11:10-12:00	Panel Discussion	Martin Ward	Toshiba Europe
		Norbert Luetkenhaus	University of Waterloo
		Tsuyoshi Takagi	The University of Tokyo
		Masato Koashi	The University of Tokyo
12:00-13:40	**Lunch Break & Networking**		
	CC-04. Free-Space Quantum Key Distribution	**Yoko Miyamoto #**	**The University of Electro-Communications**
13:40-14:10	CC-04-1. Quantum communication in Space – An important step towards a global quantum internet	Thomas Jennewein	University of Waterloo
14:10-14:40	CC-04-2. Free-space optical communication technology for quantum key distribution via satellite	Hideki Takenaka	Tokyo Metropolitan University
14:40-15:10	CC-04-3. Study on QKD Using Optical Wireless Technology: Challenges and Future Prospects for Practical Use of Quantum Cryptography	Masayuki Miyashita	SoftBank
15:10-15:30	**BREAK**		
	CP-07. Quantum Annealing	**Shu Tanaka #**	**Keio University**
15:30-16:00	CP-07-1. TBA	Yuya Seki	Keio University
16:00-16:30	CP-07-2. Thermalization and criticality on an analog-digital quantum simulator	Trond I. Andersen	Google Quantum AI
16:30-17:00	CP-07-3. Annealing Quantum Computation for Scientific Applications	Mark Johnson	D-Wave

July 31

Grand Hall 2+3

	Session / Presentation	Chairperson# / Presenter	Affiliation
	JT-01 (CP+SE). Quantum Sensing, Biology and Computing	**Makoto Negoro #**	**The University of Osaka**
8:40-9:10	JT-01-1. Future of Quantum Biology through Quantum Computing: Expectations and Practical Challenges	Wataru Mizukami	The University of Osaka
9:10-9:40	JT-01-2. Experimental Evidence for Quantum Tunnelling of Protons in DNA Mutation	Johnjoe McFadden	University of Surrey
9:40-10:10	JT-01-3. Quantum Technologies for Magnetic Resonance Spectroscopy, Imaging and Sensing in the Life Sciences	Martin B. Plenio	Ulm University
10:10-10:30	**BREAK**		
	JT-02 (CC+CP). Quantum Communication and Computation	**Yasunari Suzuki #**	**RIKEN**
10:30-11:00	JT-02-1. Simulating photons traveling through linear optical elements for more accurate models of quantum interconnects	Akihito Soeda	NII
11:00-11:30	JT-02-2. Fast and Scalable Fault-Tolerant Quantum Computing with Neutral Atoms and Cavity-QED Interconnects	Shinichi Sunami	NanoQT
11:30-12:00	JT-02-3. Toward Scalable Multicore Fault-Tolerant Quantum Computers using Quantum Multiplexing	Shin Nishio	Keio University, University College London

Grand Hall 1

	Session / Presentation	Chairperson# / Presenter	Affiliation
	CC-05. Social Implementation of Quantum Communication	**Mayuko Koezuka #**	**Toshiba**
8:40-9:10	CC-05-1. Migration to Post-Quantum Cryptography: Recent Trend and Challenges in the Financial Sector	Masashi Une	Bank of Japan
9:10-9:40	CC-05-2. Towards a Global Quantum Cryptography Infrastructure	Taofiq Paraiso	Toshiba Europe
9:40-10:10	CC-05-3. Quantum Key Distribution Research and Development in NEC	Hiroki Kawahara	NEC
10:10-10:30	**BREAK**		
	SE-06. Atomic/Ion Quantum Sensing	**Utako Tanaka #**	**The University of Osaka**
10:30-11:00	SE-06-1. Multi-ion clocks for compact clocks and sensors	Tanja E. Mehlstaubler	Physikalisch-Technische Bundesanstalt Leibniz Universität Hannover
11:00-11:30	SE-06-2. Quantum-amplified global-phase spectroscopy on an optical clock transition	Leon Zaporski	Massachusetts Institute of Technology
11:30-12:00	SE-06-3. Contributions of NICT's Optical Lattice Clock to Local and International Timescales	Hidekazu Hachisu	NICT

Grand Hall 1+2+3

	Session / Presentation	Chairperson# / Presenter	Affiliation
12:00-13:40	**Lunch Break & Networking**		
	PL-05. IYQ Keynotes	**Masahiro Kitagawa #**	**The University of Osaka**
13:40-14:10	PL-05-1. On the Nature of Quantum Algorithms	Isaac Chuang	Massachusetts Institute of Technology
14:10-14:40	PL-05-2. Superconducting quantum computing at the International Year of Quantum Science and Technology and the future	Yasunobu Nakamura	RIKEN, The University of Tokyo
14:40-15:10	PL-05-3. Engineering high quality qubits in silicon with atomic precision	Michelle Y. Simmons	The University of New South Wales
15:10-15:20	**BREAK**		
	Quantum Art Exhibition	**Makoto Negoro #**	**The University of Osaka**
15:20-15:30	Quantum Art Exhibition	Akihiro Kubota	Tama Art University
	PL-06. IYQ Keynotes	**Mio Murao #**	**The University of Tokyo**
15:30-16:00	PL-06-1. "Machine Learning Physics" --- an emergent new arena of research unifying AI and quantum physics	Koji Hashimoto	Kyoto University
16:00-16:30	PL-06-2. Make Optical Lattice Clocks Compact and Useful for Real-world Applications	Hidetoshi Katori	The University of Tokyo, RIKEN
16:30-17:00	PL-06-3. The Age of Computation is yet to Come	Artur Ekert	University of Oxford

August 1

Grand Hall 3

	Session / Presentation	Chairperson# / Presenter	Affiliation
	OP. Opening	**Yoshiro Hirayama #**	**QST**
8:40-8:55	OP. Opening Remarks	Tetsuomi Sogawa	NTT
	SP-01. Quantum Security and Network	**Goichiro Hanaoka #**	**AIST**
8:55-9:25	SP-01-1. Securing Global Networks in the Quantum Era	Chune Yang Lum	SpeQtral
9:25-9:45	SP-01-2. Quantum secure cloud technology for establishing highly confidential data centers	Mikio Fujiwara	NICT
9:45-10:05	SP-01-3. Applications for Quantum Secure Cloud	Shinya Murai	Toshiba Digital Solutions
10:05-10:20	**BREAK**		
	SP-02. Quantum Computing	**Masahiro Horibe #**	**AIST**
10:20-10:50	SP-02-1. Towards Quantum-Accelerated Supercomputing - A Europe-Japan Perspective	Juha Vartiainen	IQM Quantum Computers
10:50-11:10	SP-02-2. System operation technology for the quantum computer 'A' testbed	Shinichi Yorozu	RIKEN
11:10-11:30	SP-02-3. Quantum Circuit Generation with Transformer-Based Generative AI	Shunya Minami	AIST
11:30-13:00	**Lunch Break & Networking**		
	SP-03. Innovation Creation Platform	**Shunsuke Okada #**	**Q-STAR**
13:00-13:30	SP-03-1. Next-Gen Computing – Bits, Qubits, and Neurons Unite	Heike Riel	IBM
13:30-13:50	SP-03-2. Quantum Universe: A Platform of Education for Creating Quantum Community	Masayuki Ohzeki	Tohoku University, Institute of Science Tokyo
13:50-14:10	SP-03-3. Challenges in the Development of the Quantum Workforce	Shinya Ogata	SKILLUP NeXt
14:10-14:25	**BREAK**		
	SP-04. Quantum Sensing	**Takeshi Oshima #**	**QST**
14:25-14:45	SP-04-1. Nanoscale Quantum Sensors for Ultra-Sensitive Body Fluid Diagnostics: Toward a Quantum Liquid Biopsy Platform	Ryuji Igarashi	QST
14:45-15:05	SP-04-2. Application of Dissolution Dynamic Nuclear Polarization using the Triplet Electrons in Pentacene	Makoto Negoro	QST, The University of Osaka
15:05-15:25	SP-04-3. SiC-based quantum sensors for automobile application	Katsuhiro Kutsuki	Toyota Central R&D Labs.
15:25-15:30	**CL. Closing**	**Hisayoshi Itoh**	**QST**

	Session / Presentation	Chairperson# / Presenter	Affiliation
8:40-8:55	**Moonshot:Opening Opening Remarks**	**Masahiro Kitagawa**	**Program Director of Moonshot Goal 6, The University of Osaka**
	MS-01. Fault-tolerant Quantum Computing	**Shigeru Yamashita #**	**Ritsumeikan University**
8:55-9:40	MS-01-1. Quantum Error Correction Below the Surface Code Threshold	Volodymyr Sivak	Google Quantum AI
9:40-10:25	MS-01-2. Research and Development of Theory and Software for Fault-tolerant Quantum Computers	Masato Koashi	The University of Tokyo
10:25-10:45	**BREAK**		
10:45-11:30	MS-01-3. Development of Scalable Highly Integrated Quantum Bit Error Correction System (QUBECS)	Kazutoshi Kobayashi	Kyoto Institute of Technology
11:30-11:45	Discussion		
11:45-13:15	**Lunch Break & Networking**		
	MS-02. Quantum Computing (Superconducting)	**Yasunobu Nakamura #**	**RIKEN, The University of Tokyo**
13:15-14:00	MS-02-1. Development of Integration Technologies for Superconducting Quantum Circuits	Tsuyoshi Yamamoto	NEC
14:00-14:10	Discussion		
14:10-14:30	**BREAK**		
	MS-03. Quantum Computing (Neutral Atom)	**Shiro Kawabata #**	**Hosei University**
14:30-15:15	MS-03-1. Large-scale and high-coherence fault-tolerant quantum computer with dynamical atom arrays	Kenji Ohmori	National Institutes for Natural Sciences
15:15-16:00	MS-03-2. Nanofiber Cavity Quantum Electrodynamics Systems for Distributed Quantum Computing	Takao Aoki	Waseda University, RIKEN
16:00-16:15	Discussion		
16:15-16:35	**BREAK**		
	MS-04. Quantum Computing (Trapped ion)	**Nobuyuki Imoto #**	**The University of Tokyo**
16:35-17:20	MS-04. Fault-tolerant Quantum Computing with Photonically Interconnected Ion Traps	Hiroki Takahashi	OIST
17:20-17:30	Discussion		

August 2

Grand Hall 1+2

	Session / Presentation	Chairperson# / Presenter	Affiliation
	MS-05. Quantum Computing (Semiconductor)	**Hidemi Ishiuchi #**	**Former President EIDEC**
8:40-9:25	MS-05-1. Development of Semicondutor Qubit Systems	Seigo Tarucha	RIKEN
9:25-10:10	MS-05-2. Large-scale Silicon Quantum Computer	Hiroyuki Mizuno	Hitachi
10:10-10:25	Discussion		
10:25-10:45	**BREAK**		
10:45-11:45	**MS-06 . Quantum Computing (Photon)**	**Masanao Ozawa #**	**Nagoya University**
10:45-11:30	MS-06-1. Optical Quantum Computers with Quantum Teleportation	Akira Furusawa	The University of Tokyo, RIKEN
11:30-11:40	Discussion		
11:40-13:10	**Lunch Break & Networking**		
	MS-07. Quantum Communication and Network	**Nobuyuki Imoto #**	**The University of Tokyo**
13:10-13:55	MS-07-1. Development of Quantum Interfaces for Building Quantum Computer Networks	Hideo Kosaka	Yokohama National University
13:55-14:40	MS-07-2. Quantum Cyberspace with Networked Quantum Computer	Takashi Yamamoto	The University of Osaka
14:40-15:00	**BREAK**		
15:00-15:45	MS-07-3. Scalable and Robust Integrated Quantum Communication System	Shota Nagayama	Keio University
15:45-16:00	Discussion		
16:00-16:10	**CL. Closing**	**Masahiro Kitagawa**	**General Chair, Quantum Innovation 2025 Organizing Committee**

Poster Session

Poster 1

Quantum Computing

July 29   17:10-17:50 Odd Number 17:10-17:50 Even Number
July 30   17:10-17:50 Even Number 17:10-17:50 Odd Number

Park Hall 1+2

Presentation ID	Presentation	Presenter	Affiliation
PO-CP-001	Locality-aware Pauli-based computation for local magic state preparation	Yutaka Hirano	The University of Osaka
PO-CP-002	Variational quantum-neural hybrid imaginary time evolution	Hiroki Kuji	Tokyo University of Science / Chuo University
PO-CP-003	Weighted Range-Constrained Ising-Model Decoder for Quantum Error Correction	Xinyi GUO	Kyoto University
PO-CP-004	Doubly-polylog-time-overhead fault-tolerant quantum computation by a polylog-time parallel minimum-weight perfect matching decoder	Yugo Takada	The University of Osaka
PO-CP-005	Determining Molecular Ground State with Quantum Imaginary Time Evolution using Broken-Symmetry Wave Function	Pawan Sharma Poudel	Keio University
PO-CP-006	22 nm-Gain Cell DRAM for Cryogenic Operation	Tomoki Iwase	Kyoto Institute of Technology
PO-CP-007	Efficient Magic State Distillation by Zero-level Distillation	Tomohiro Itogawa	The University of Osaka
PO-CP-008	A 4.6-373K Functional 800MS/s 12b Buffer-then-Amplify Charge-Pump-Based Pipelined TI-SAR ADC with Integrated-Active-Hold Technique	Kaoru Yamashita	Technische Universitat Braunschweig / Keio University
PO-CP-009	Learning the solution of Ising optimization thanks to compressive sensing	Baptiste Pierre Laurent Chevalier	Keio University
PO-CP-010	A Scalable Interconnect for FPGA-Based Quantum Error Correction Systems toward FTQC	Junsei Tabata	Kumamoto University
PO-CP-011	Single-ion spectroscopy of quadrupole transitions in Yb+ with three-dimensional cooling observed using two setups	Takahiro Enomoto	Kyoto University
PO-CP-012	Error Detection in Fixed-Frequency Transmon Qubits with Distance-9 Repetition Code	Nilton F. G. Filho	The University of Osaka
PO-CP-013	Continuous-variable circuit-knitting and state preparation of non-Gaussian states using projective squeezing	Keitaro Anai	University of Tokyo
PO-CP-014	Construction of Encoding Circuits and Performance Evaluation of Quantum Error Correction Methods for a Quantum BCH Code.	Kohei Yamamoto	The University of Osaka
PO-CP-015	Programmable Temporal-Waveform Shaping of Optical Non-Gaussian Quantum States Generated by Generalized Photon Subtraction	Yu Nishizawa	The University of Tokyo
PO-CP-016	Laser cooling and trapping of Yb atoms toward constructing Yb-Rb dual-species atom array	Hiroki Ueda	The University of Osaka
PO-CP-017	Improvement of Zero-Level Distillation	Yukihiko Kondo	University of Tsukuba
PO-CP-018	Sub-100 mK CMOS analog circuits for precision signal generation and acquisition in silicon spin qubit control	Ryozo Takahashi	Kobe University

Presentation ID	Presentation	Presenter	Affiliation
PO-CP-019	Development of Transition Edge Sensor with high performance for optical quantum computer	Takeshi Jodoi	National Institute of Advanced Science and Technology / The University of Tokyo
PO-CP-020	A full-stack neutral-atom quantum computer	omar el farouk kecir	National Institutes for Natural Sciences
PO-CP-021	Sidewall Spacer Passivated Epitaxial NbN/AlN/NbN Trilayer Josephson Junctions for Superconducting Qubits	Koki Honda	Tohoku University
PO-CP-022	A resonant microwave-to-optical quantum transducer based on a diamond color center	Kyosuke Goto	Yokohama National University
PO-CP-023	Time-resolved imaging of normal mode of parallel ion chains	Ryosuke Nishimoto	The University of Osaka
PO-CP-024	Fiber-Integrated Diamond Optomechanical Crystal with Embedded NV Centers	Kiyotaka Sato	Yokohama National University
PO-CP-025	Logical entanglement generation to connect 2D-array-qubit systems	Yuya Maeda	The University of Osaka
PO-CP-026	Towards Cavity QED with Trapped Barium Ions	Savelii Dudoladov	OIST
PO-CP-027	Realization of Control of the Superconducting resonator with Josephson coupler	Genta Ando	The University of Tokyo / RIKEN
PO-CP-028	Implementation of peripheral technologies for large-scale integration of silicon spin qubits	Riku Wada	Institute of Science Tokyo
PO-CP-029	Coherent control and concatenated continuous driving of a silicon hole spin qubit at elevated temperatures toward high-fidelity hot spin qubits	Yusuke Sato	Institute of Science Tokyo
PO-CP-030	Demonstration of Hong-Ou-Mandel Interference Using Diamond Color Center	Daisuke Ito	Yokohama National University
PO-CP-031	Highly Biased Spin Cat Qubit with 173Yb atoms	Toshi Kusano	Kyoto University
PO-CP-032	Toward optically addressable fault tolerant quantum memory	Kansei Watanabe	YOKOHAMA National University
PO-CP-033	Non-Destructive Spin-Photon Entanglement Generation with the Nitrogen Nuclear Spin Memory of a Diamond NV Center	Taichi Fujiwara	Yokohama National University
PO-CP-034	Estimates of entanglement generation rate and error rate in entanglement purification using superconducting quantum routers	Takumi Kobayashi	Yokohama National University
PO-CP-035	Optimizing Spin Qubit Shuttling in Si/SiGe Simulation including Random Alloy Disorder	Kenichiro Senda	Osaka University
PO-CP-036	The design, fabrication and examination of a 3D Y-junction ion trap	Naoto Hiramatsu	The University of Tokyo
PO-CP-037	Realization of maximally-entangling two-qutrit gates using the Cross-Resonance scheme	Yash Saxena	Center for Quantum Technologies, India
PO-CP-038	Bacon-Shor Board Games	Jiajun Chen	Okinawa Institute of Science and Technology Graduate University
PO-CP-039	Spatiotemporal Encoding of Itinerant Microwave Photons and Mode-Selective Absorption	Keika Sunada	The University of Tokyo
PO-CP-040	Comparison of the accuracy of decoder soft outputs on the surface code	Tim Chan	University of Oxford
PO-CP-041	Implementing $\cos\mu\varphi$ elements in superconducting qubits	Cheng-Li Chen	The University of Tokyo

Presentation ID	Presentation	Presenter	Affiliation
PO-CP-042	Quantum Implementation of Information Set Decoding for Fixed-Weight Nearest Neighbor Problem	Tomoki Kano	Shibaura Institute of Technology
PO-CP-043	Reducing T-depth in Quantum Oracle Generation by Selecting Improve Toffoli Gates to Decompose MCT Gates Simultaneously	Zanhe Qi	Ritsumeikan University
PO-CP-044	Quantum model reduction based on Oja's flow	Miguel Angel Casanova Medina	University of Padova, Italy
PO-CP-045	Parallelization of Hadamard Test	Soichiro Imamura	The University of Tokyo
PO-CP-046	Parametrized quantum instruments	Haruki Emori	Hokkaido University / RIKEN
PO-CP-047	A multi-product commutation relation for transpiling Clifford+T circuits	Yusei Mori	The University of Osaka
PO-CP-048	Observation and Analysis of Phonon Propagation in a Many-ion Array under Harmonic Potential	Takumi Yuri	The University of Osaka
PO-CP-049	On the quantum computational complexity of classical linear dynamics with geometrically local interactions: Dequantization and universality	Kazuki Sakamoto	The University of Osaka
PO-CP-050	Polynomial time constructive decision algorithm for multivariable quantum signal processing	Yuki Ito	The University of Osaka
PO-CP-051	Large-Scale Quantum Device Benchmarking via LXEB with Particle-Number-Conserving Random Quantum Circuits	Takumi Kaneda	The University of Osaka
PO-CP-052	Derandomization of Random Advice for Relational Problems in Heuristic Complexity	Natsuto Isogai	The University of Tokyo
PO-CP-053	Quantum Functional Protocols with Partial Knowledge	Timothy Forrer	University of Tokyo
PO-CP-054	The State Preparation of Multivariate Normal Distribution using Tree Tensor Network	Hidetaka Manabe	The University of Osaka
PO-CP-055	Learning Functions of Hamiltonians with Hamiltonian Fourier Features	Yuto Morohoshi	The University of Osaka
PO-CP-056	Characterizing Conditions for Reducing Qubit Requirements in Quantum Instruments via Weak Signaling	Kosuke Matsui	The University of Tokyo / Hon Hai (Foxconn) Research Institute
PO-CP-057	Observation of Josephson harmonics before and after the alternating-bias assisted annealing	Haruki Kikuchi	The University of Tokyo
PO-CP-058	Quantum Power Iteration Unified Using Generalized Quantum Signal Processing	Viktor Khinevich	The University of Osaka
PO-CP-059	Simulation and performance analysis of quantum error correction with a rotated surface code under a realistic noise model	Mitsuki Katsuda	The University of Osaka
PO-CP-060	Neural-network-assisted Monte Carlo sampling trained by Quantum Approximate Optimization Algorithm	Yuichiro Nakano	The University of Osaka
PO-CP-061	Singular value transformation for unknown quantum channels	Ryotaro Niwa	The University of Tokyo
PO-CP-062	Study on the Effectiveness of Quench in Quantum Annealing	Keita Takahashi	Keio University
PO-CP-063	Effects of Quantum Annealing Correction Using Copies with Interactions for Frustrated Ring Model	Tomohiro Hattori	Keio University
PO-CP-064	Optimization performance of factorization machine with annealing using sequentially built training dataset	Mayumi Nakano	Keio University

Presentation ID	Presentation	Presenter	Affiliation
PO-CP-065	Evaluating Solution Quality in Multi-Objective Vehicle Routing Problems with Higher-order Terms	Kazuki Ikeuchi	Keio University
PO-CP-066	Multi-Penalty Sample Persistence Variable Reduction for Constrained Combinatorial Optimization Problems	Shunta Ide	Keio University
PO-CP-067	Evaluating the solution performance of the augmented Lagrange method on Ising machines	Shunsuke Awai	Keio University
PO-CP-068	Gibbs sampling based on quantum-classical correspondence theory	Tetsuro Abe	Keio University
PO-CP-069	Evaluating the solution performance of Large Neighborhood Search with inequality constraints using an Ising machine	Koshiro Fujimoto	Keio University
PO-CP-070	Recent progress of electron resistance measurement on the surface of solid neon	Ka Wing Yip	Okinawa Institute of Science and Technology
PO-CP-071	Spin-dependent optical properties of Ce-implanted Mg_2SiO_4	Manato Kawahara	Tohoku University
PO-CP-072	Exponential distillation of dominant eigenproperties	Tenzan Araki	University of Oxford
PO-CP-073	Microwave amplification by using Niobium-based Josephson-junction array parametric oscillator	Ching-Ping Lee	National Tsing Hua University
PO-CP-074	Fault Resilience of Dissipative Processes for Quantum Computing	James Purcell	University College London

Poster 1

Quantum Cryptography and Communication

July 29   17:10-17:50 Odd Number 17:10-17:50 Even Number /
July 30   17:10-17:50 Even Number 17:10-17:50 Odd Number

Park Hall 1+2

Presentation ID	Presentation	Presenter	Affiliation
PO-CC-001	Long-distance device-independent quantum key distribution with standard optical tools	Anthony Brendan	Keio University
PO-CC-002	Loss tolerant entanglement swapping with repetition squeezed coherent states	Shohei Kiryu	Keio University
PO-CC-003	Distimation's Real-world Performance on a Superconducting Quantum Computer	Hikaru Yokomori	Keio University
PO-CC-004	Linear Programming Approach for Demonstrating Network Nonlocality	Salome Catherine Hayes-Shuptar	Okinawa Institute of Science and Technology
PO-CC-005	Effects of Digital Signal Processing on the Performance of Continuous-Variable Quantum Key Distribution	Shinya Sano	Gakushuin University
PO-CC-006	Loss-tolerant quantum network sensing protocol for arbitrary linear combination of distributed multiple parameters	Yoshihiro Ueda	Keio university
PO-CC-007	Enhancement of the rate-loss scaling for polarization entanglement distribution	Hikaru Shimizu	Keio University
PO-CC-008	Long distance device-independent quantum cryptography with W states	Makoto Ishihara	Keio University
PO-CC-009	Efficient state estimators for quantum networks	Joshua Carlo A. Casapao	Okinawa Institute of Science and Technology Graduate University

Presentation ID	Presentation	Presenter	Affiliation
PO-CC-010	Fidelity Analysis of Entanglement Swapping with Bell Pairs of Varying Initial Fidelities	Masato Kai	University of Tsukuba
PO-CC-011	Optical properties of single photons emitted from a single rare-earth ion confined in the tapered fiber	Kaito Shimizu	Tokyo University of Science
PO-CC-012	The State-refocusing Square Root Instrument and its applications on Quantum Correlations such as Uncertainty Principle	Jiaxi Kuang	Nagoya University
PO-CC-013	Novel Quantum Fidelity and Latency Link Metric for Entanglement Routing Design in Quantum Networks	Trang Thu NGUYEN	Japan Advanced Institute of Science and Technology
PO-CC-014	Toward experimental demonstration of Ancilla-Driven Blind Quantum Computation: Generation of Photonic Three-Qubit Entanglement	Kenta Utsunomiya	Keio University
PO-CC-015	Toward experimental demonstration of Ancilla-Driven Blind Quantum Computation: Numerical analysis of the photonic parameter-blinded variational quantum eigensolver	Manatsugu Tagami	Keio University
PO-CC-016	Scalable Hierarchical QDS-based Quantum Byzantine Agreement for Fully Decentralized Quantum Networks	Kosuke Chino	Keio University
PO-CC-017	Fabrication of gate-defined Quantum dot in a Bull's Eye optical cavity towards efficient Photon-Spin conversion	Hosumi Sato	The University of Osaka
PO-CC-018	Spin-optomechanical diamond cavity for microwave-telecom transduction	Hyuga Oka	The University of Tokyo
PO-CC-019	SeQUeNCe: A Customizable and Scalable Simulator for Quantum Network Architecture Design and Validation	Rajkumar Kettimuthu	Argonne National Laboratory / University of Chicago

Poster 1

Quantum Sensing

July 29   17:10-17:50 Odd Number 17:10-17:50 Even Number /
July 30   17:10-17:50 Even Number 17:10-17:50 Odd Number

Park Hall 1+2

Presentation ID	Presentation	Presenter	Affiliation
PO-SE-001	Realization of high-resolution quantum infrared spectroscopy with pulsed laser excitation	Jasleen Kaur	Kyoto University
PO-SE-002	Active Magnetic Shielding Adapted to Sensor Pose for OPM-MEG Validated with a Dry Phantom	Xinyu Cao	The University of Tokyo
PO-SE-003	Experimental Validation of the Superiority of Cylinder Sensor Arrays in Cardiac Current Source Estimation	Wenyu Shang	The University of Tokyo
PO-SE-004	Development of Compact Low-Field MRI Based on Quantum Spintronic Tunnel Magneto-resistive Sensors	Seiya Takano	Tohoku University
PO-SE-005	Non-destructive Metal Particle Inspection Using Diamond Quantum Sensors	Hayate Yamano	Toyota Motor Corporation / Institute of Science Tokyo
PO-SE-006	Magnetic sensing with NV centers in detonation nanodiamond	Masanao Ohori	Kyoto University
PO-SE-007	Development of quantum sensing NMR using diamond NV centers for biomolecular measurements	Kazuki Kondo	Institute for Chemical Research

Presentation ID	Presentation	Presenter	Affiliation
PO-SE-008	Efficient and polarization-dependent coupling between nitrogen-vacancy centers and microwave based on spoof surface plasmon polaritons	Kosuke Takada	Toyohashi University of Technology / The University of Tokyo
PO-SE-009	Evaluation of internal stress in phosphorus-doped diamond for quantum sensors	HIromu Nakagawa	Kyoto University
PO-SE-010	Development of gravity gradient sensor TOBA; TOrsion Bar Antenna	Tatsuya Sugioka	The University of Tokyo
PO-SE-011	Excitation wavelength dependence of photocurrent from a single V2 center in 4H-SiC	Kazuki Okajima	Kyoto University
PO-SE-012	Antibunching measurements of blue fluorescence protein at room temperature	Yusuke Murase	The University of Electro-Communications
PO-SE-013	Hybrid spectroscopy of visible and telecom band entangled photons	Koya Onoda	The University of Electro-Communications
PO-SE-014	Fluorescent Thermometers Based on Carbon Quantum Dots with Various Detection Modes for Intracellular Temperature Measurement	Yuki S. Kato	The University of Osaka
PO-SE-015	Development of Single Photon Confocal Spectral Microscopy with Transition Edge Sensors	Koki Shirota	AIST / G-QuAT / University of Tsukuba
PO-SE-016	Orders-of-magnitude improved precision spectroscopy of an inner-shell orbital clock transition in neutral ytterbium	Taiki Ishiyama	Kyoto University
PO-SE-017	Design of Magnetic Flux Concentrators For Human Magnetoencephalography By Diamond Quantum Magnetometer	Tingyu Zhu	The University of Tokyo
PO-SE-018	Evaluation of the relationship between the position of photon incidence and TES response	Nao Kominato	AIST
PO-SE-019	Filtered Boxcar-Averaging Detection of Diamond NV Ramsey-based Magnetometry for Enhancing DC Field Sensitivity	Yuta Araki	Institute of Science Tokyo
PO-SE-020	Proof-of-principle demonstration of simultaneous AC magnetic field and temperature imaging by scanning NV center microscopy	Shuntaro Komuro	Keio University
PO-SE-021	Sensing via the nuclear spin for axion dark matter detection	Ernst David Herbschleb	Kyoto University
PO-SE-022	Visualization of Microglial Phenotypic Changes Using P2Y12 Receptor-Targeted Compound in Two Photon Imaging and MRI	Yutaro Saito	Nagoya University
PO-SE-023	Magnetoencephalographic Mapping of Optogenetic Rats Using Optically Pumped Magnetometer	Kanta Komuro	The University of Tokyo
PO-SE-024	Analysis of FAD binding affinity for chicken cryptochrome 1 and its mutant	Shota Hosono	Waseda University
PO-SE-025	Simultaneous wide-field imaging of AC current and temperature with diamond quantum sensor for microcircuit analysis	Yuma Itabashi	Keio University
PO-SE-026	Analysis of electron spin single / double resonance signals in ensemble NV center systems focusing on inhomogeneous broadening	Rui Suzuki	Keio University
PO-SE-027	Development of a fiber bundle-based spectral imaging system for all-optical thermometry using diamond NV- centers	Daiki Ueshima	Kyoto University
PO-SE-028	Bright Single Lead-Vacancy Center in Diamond Solid Immersion Lens	Koyo Hirai	Institute of Science Tokyo

Poster 2

Quantum Computing

July 29 17:10-18:30

Foyer in front of Park Hall

Presentation ID	Presentation	Presenter	Affiliation
PO-CP-075	Clifford gates with logical transversality for self-dual CSS codes	Theerapat Tansuwannont	The University of Osaka
PO-CP-076	A Quantum Operating System for Neutral Atom Computers with Dynamic Atomic Arrays	Chihiro Yoshimura	Hitachi
PO-CP-077	Development of Scalable Highly Integrated Quantum Bit Error Correction System (QUBECS)	Kazutoshi Kobayashi	Kyoto Institute of Technology
PO-CP-078	Atom-photon interface based on nanofiber cavity QED with ytterbium atoms	Hideki Ozawa	Nanofiber Quantum Technologies
PO-CP-079	Investigation of Two-Step Heterogeneous Iridium Films for Optical TES with Tunable Resistance and Photon Absorptance	Daizoh Nagahara	Institute of Engineering Innovation, School of Engineering, The University of Tokyo
PO-CP-080	Decoupling a singlet-triplet qubit from charge noise	Juan S. Rojas-Arias	RIKEN, Center for Quantum Computing (RQC)
PO-CP-081	Electron-channel blockade for plasmonic wave packets	Shintaro Takada	AIST / The University of Osaka
PO-CP-082	Development of a Time-Division Multiplexed Electrode Control System for Trapped-Ion QCCD Architectures	Ryutaro Ohira	QuEL
PO-CP-083	Development of Ultrahigh-precision Ion Implantation System Based on Laser-cooled Ion Source	Koichi Hosaka	National Institutes for Quantum Science and Technology (QST)
PO-CP-084	Cross-correlated charge noise characterization in a series silicon double quantum dot based on transport currents	Jun Yoneda	The University of Tokyo
PO-CP-085	Critical Temperature Modulation on Iridium TES Induced by FIB Processing	M. Amin Choghadi	The University of Tokyo
PO-CP-086	All-optical feedforward with THz-bandwidth optical parametric amplifier enabling ultra-fast quantum information processing	Taichi Yamashima	NTT Corporation / The University of Tokyo
PO-CP-087	Signal routing implementation using TSV-integrated interposers for scalable Si qubits	Misato Taguchi	Kobe University
PO-CP-088	Detection Efficiency Calibration of Superconducting Transition-Edge Sensors for Quantum Photonics Applications	Tetsuya Tsuruta	National Institute of Advanced Industrial Science and Technology
PO-CP-089	PPLN monolithic integration chip of OPAs and signal/pump divider for ultra-fast optical quantum processors	Asuka Inoue	NTT Device Technology Laboratories
PO-CP-090	System Architecture for Quantum Error Correction in Silicon: Quantum Operating System and Shuttling-Based Surface Code Analysis	Ryuji Ukai	Hitachi
PO-CP-091	Multiwavelength, multizone photonic architecture for ion traps	Alto Osada	The University of Osaka
PO-CP-092	Exploring Graph State Local Equivalence Classes with Distance Hereditary Split Decompositions	Nicholas Smith Connolly	Okinawa Institute of Science and Technology
PO-CP-093	Frequency design for improving the yield of fixed-frequency superconducting qubit system using siZZle-CZ gates	Kazuhisa Ogawa	The University of Osaka

Presentation ID	Presentation	Presenter	Affiliation
PO-CP-094	Research and development on time standards contributing to quantum computers using ultracold neutral atoms	Takumi Kobayashi	National Institute of Advanced Industrial Science and Technology
PO-CP-095	Photonic Link-Based Microwave Transmission from Room Temperature for Qubit Control in Cryogenic Environments	Hidehisa Shiomi	The University of Osaka
PO-CP-096	Long-Term Stability Assessment of Multi-Channel Microwave Outputs and Theoretical Analysis of the Impact of Static Errors on Quantum Gate Fidelity	Yoshinori Kurimoto	QuEL
PO-CP-097	Low-bond-dimension binary tensor network approximation as a task for quantum computers	Wojciech Roga	Keio University
PO-CP-098	40Ca Ion Trap using Surface Electrode	Chao Zhang	The University of Tokyo
PO-CP-099	Data compression using Quantum algorithm for Navigation	Shunsuke Sotobayashi	blueqat research
PO-CP-100	Measuring Trotter Error and Precision-Guaranteed Hamiltonian Simulations	Tatsuhiko N. Ikeda	ZEN University
PO-CP-101	TE-PAI: Exact Time Evolution by Sampling Random Circuits	Chusei Kiumi	The University of Osaka
PO-CP-102	Quantum-inspired optimization of nanoparticle catalysts using tensor trains	Tuan Minh Do	The University of Osaka
PO-CP-103	Variational Quantum Circuit Optimization via Density Matrix Renormalization Group	Shohei Miyakoshi	The University of Osaka / RIKEN R-CCS
PO-CP-104	Adaptive sampling-based optimization of quantics tensor trains for noisy functions: applications to quantum simulations	Kohtaroh Sakaue	Saitama University
PO-CP-105	Reducing Quantum Cloud Job Latency: Quantum-Classical Hybrid Execution and Quantum Multi-programming	Ryo Uchida	Systems Engineering Consultants Co.,LTD.
PO-CP-106	Time-stepping Hamiltonian Simulation for Solving Non-linear PDEs via Schrodingerisation	Sangwon Kim	RIKEN
PO-CP-107	Bath-Driven Quantum-Spin Transistor	Heitor Peres Casagrande	Okinawa Institute of Science and Technology
PO-CP-108	Quantum Memory Resource Advantage in Reinforcement Learning	Hon Wai Lau	Okinawa Institute of Science and Technology Graduate University
PO-CP-109	A T-count and T-depth optimal 3-input Boolean phase oracle library	David Lawrence Bantug Clarino	Ritsumeikan University
PO-CP-110	Advancing Electron-on-Helium Quantum Sensing From Corbino Devices to Microchannel-Integrated RF Reflectometry	Saurabh Singh	Okinawa Institute of Science and Technology
PO-CP-111	OQTOPUS: An Open-Source Software Stack for Cloud-Based Quantum Computing	Takafumi Miyanaga	The University of Osaka
PO-CP-112	Classical and Quantum Computation of Iron-Sulfur Clusters for Nitrogen Fixation	Satoru Yamada	The University of Osaka

Poster 2

Quantum Computing

July 30 17:10-18:30

Foyer in front of Park Hall

Presentation ID	Presentation	Presenter	Affiliation
PO-CP-113	Estimating energy-level differences via dynamics simulation on quantum circuits	Norifumi Matsumoto	Fujitsu
PO-CP-114	Classical and Quantum Computation of Mn Oxide Clusters for Water Oxidation in Oxygen Evolving Complex of Photosystem II	Kizashi Yamaguchi	Center for Quantum Information and Quantum Biology
PO-CP-115	Co-activation pattern detection using Ising machines and its application to multi-dimensional neuronal data	Kei Majima	National Institutes for Quantum Science and Technology / PRESTO, Japan Science and Technology Agency
PO-CP-116	Towards the realization of a superconducting strip photon detector system with over hundreds of channels	Shigehito Miki	National Institute of Information and Communications Technology
PO-CP-117	Josephson Junctions with Ferromagnetic Insulators for High-Coherence Superconducting Qubits	Daiki Kurihara	Tohoku University
PO-CP-118	Fundamental spin-qubit operations on quantum-chips fabricated in CMOS-compatible foundry	takuma kuno	Hitachi / Institute of Science Tokyo
PO-CP-119	Performance of Academic and Industrial Spin-1/2 Qubits in Si-28/SiGe	Leon C. Camenzind	RIKEN
PO-CP-120	Reliable low-phase-noise laser source for quantum computing with neutral atoms	Hajime Inaba	NMIJ, AIST
PO-CP-121	Comparative evaluation of electron- and hole-properties in silicon quantum dots	Shunsuke Ota	Institute of Science Tokyo
PO-CP-122	Low-Latency FPGA-Based Syndrome Graph Pruning for scalable Quantum Error Correction Decoders	Prasoon Ambalathankandy	RIKEN
PO-CP-123	Investigation of Error Statistics in Surface Codes to Guide QEC Decoder Research	Jan-Erik R. Wichmann	RIKEN
PO-CP-124	Design and numerical simulations of bicolor waveguide crossings for ion traps	Koichiro Miyanishi	The University of Osaka
PO-CP-125	Galvanically connected tunable coupler between a cavity and a waveguide	Kazuki Koshino	Institute of Science Tokyo
PO-CP-126	Monte Carlo simulation of atom transport with optical tweezers	Makoto Yamashita	The University of Osaka
PO-CP-127	Development of Large Dilution Refrigerators for Quantum Computers	Tatsuhiro Nozue	ULVAC CRYOGENICS INCORPORATED
PO-CP-128	Long-Term stability measurement with 64 fixed-frequency transmons	Koichiro Ban	The University of Osaka
PO-CP-129	Non-Gaussian Optical Quantum State Generation for Optical Quantum Information Processing	Mamoru Endo	The University of Tokyo / RIKEN
PO-CP-130	Charge sensing in an InAs gate-defined quadruple quantum dot	Nozomu Hayashi	The University of Osaka
PO-CP-131	Configuration design of multi-mode Gaussian operations on continuous-variable quad-rail lattice cluster states	Jun-ichi Yoshikawa	RIKEN
PO-CP-132	Focusing grating coupler for ion-trap quantum computing	Hiromu Sato	Kyushu University

Presentation ID	Presentation	Presenter	Affiliation
PO-CP-133	Development of MEMS optical cavities towards the large-scale ion-trap quantum computer	Tomoya Irimatsugawa	Okinawa Institute of Science and Technology
PO-CP-134	Remote Operation-Aware Logical Qubit Allocation by Central Controller in Fault Tolerant Distributed Quantum Computing	Daisuke Sakuma	Keio University
PO-CP-135	High-Fidelity Control and Noise Effect in Si/SiGe Spin Qubits	Takashi Nakajima	RIKEN
PO-CP-136	Quantum Phase and Information Entropy Dynamics of Molecules Interacting with Quantum Photon Fields	Masayoshi Nakano	The University of Osaka
PO-CP-137	Does there exist a quantum fingerprinting without coherent measurements?	Atsuya Hasegawa	Nagoya University
PO-CP-138	Group Order is in QCMA	Dhara R Thakkar	Nagoya University
PO-CP-139	Even-Cycle Detection in the Randomized and Quantum CONGEST Model	Mael Luce	Nagoya University
PO-CP-140	Upper bounding the quantum space complexity for computing class group and principal ideal problem	Iu-Iong Ng	Waseda University
PO-CP-141	Probabilistic storage-and-retrieval of pure quantum combs	Wataru Yokojima	The University of Tokyo
PO-CP-142	A Solovay?Kitaev theorem for quantum signal processing	Zane Marius Rossi	The University of Tokyo
PO-CP-143	Quantum-classical hybrid auxiliary-field quantum Monte Carlo approach with quantum selected configuration interaction	Yuichiro Yoshida	The University of Osaka
PO-CP-144	Low-intrinsic-loss Josephson traveling-wave parametric amplifiers	C. W. Sandbo Chang	RIKEN
PO-CP-145	Improved quantum algorithm for calculating eigenvalues of differential operators and its application to estimating the decay rate of the perturbation distribution tail in stochastic inflation	Koichi Miyamoto	The University of Osaka
PO-CP-146	Ancilla-free T-optimal Clifford+T synthesis for single-qubit unitaries	Hayata Morisaki	The University of Osaka
PO-CP-147	Analytical lower bound on query complexity for transformations of unknown unitary operations	Tatsuki Odake	The University of Tokyo
PO-CP-148	Evaluation of subproblem size dependency in a hybrid optimization method	Shuta Kikuchi	Keio University
PO-CP-149	Enhancing the operation, usability, and community engagement of quantum computing systems	Hideaki Oba	RIKEN
PO-CP-150	MM-wave tomography of electron chain in on-chip microtrap	Mikhail Belianchikov	Okinawa Institute of Science and Technology (OIST) Graduate University

Poster 3

Quantum Cryptography and Communication

July 29 17:10-18:30

Corridor to Park Hall

Presentation ID	Presentation	Presenter	Affiliation
PO-CC-020	Investigation of highly-sensitive detection for fluorine-containing molecules with photo-chemically induced dynamic nuclear polarization (photo-CIDNP)	Shoya Shiromizu	Gifu University / Institute for Advanced Study, Gi
PO-CC-021	Co-Propagation of Discrete-Variable QKD and Live Carrier-grade C+L-band DWDM Signals with 17dBm launch power	Kotaro Ueda	TOSHIBA
PO-CC-022	High-speed, high-fidelity entanglement generation with a multiplexed cavity-QED network module	Seigo Kikura	Nanofiber Quantum Technologies (NanoQT)
PO-CC-023	Negative Refraction of Light in an Atomic Medium	Lewis Daniel Ruks	NTT Basic Research Laboratories
PO-CC-024	Transmission of single-photon entanglement in 5 km field fiber with dual-band phase stabilization	Eiichiro Kawai	Keio university
PO-CC-025	Polarization insensitive quantum frequency conversion for frequency-multiplexed quantum network	Masatake Yamada	The University of Osaka
PO-CC-026	Evaluation of 50 km spooled two-core fiber towards coexistence of quantum and classical lights	Miho Fujieda	National Institute of Information and Communications Technology
PO-CC-027	Activities for a development of QKD module certification scheme in Japan	Yoshimichi Tanizawa	Toshiba Corporation / Quantum Key Distribution Technology Promotion Committee, Quantum Forum

Poster 3

Quantum Cryptography and Communication

July 30 17:10-18:30

Corridor to Park Hall

Presentation ID	Presentation	Presenter	Affiliation
PO-CC-028	Performance Evaluation of Interoperable Key Relay in the Tokyo QKD Network	Mayuko Koezuka	Toshiba
PO-CC-029	Bell nonlocality based on cavity-QED and coherent states	Peizhe Li	Okinawa Institute of Science and Technology
PO-CC-030	Free-space optical communication technology for satellite-to-ground QKD	Shunsuke OZAWA	National Institute of Information and Communications Technology
PO-CC-031	Numerical Analysis of Ultrafast Sum Frequency Generation, including direct physical modeling of quasi-phase matching	Maximilian Constantin Hornauer	Keio University
PO-CC-032	Integration of Simulink Real-Time on Speedgoat with External State Machine Control for Quantum Communications Experiments	Randall Wayne Gladen	LQUOM
PO-CC-033	Automatic Configuration Protocols for Channel Discovery in Optical Quantum Networks	Amin Taherkhani	Keio University
PO-CC-034	Towards entanglement distribution between frequency-multiplexed absorptive quantum memories	Daisuke Yoshida	Yokohama National University / LQUOM
PO-CC-035	Analysis of Errors Contributing to Expectation Values Using Correlation Functions and Effective Quantum Volume	Takuma Oketani	Osaka University

Poster 4

Quantum Sensing

July 29 17:10-18:30

Corridor to Grand Hall

Presentation ID	Presentation	Presenter	Affiliation
PO-SE-029	Tunnel-magnetoresistance sensor with enhanced sensitivity by using Ta-doped CoFeSiB soft magnetic layer	Takafumi Nakano	Tohoku University
PO-SE-030	A Prototype Micro-Module for Tunnel Magnetoresistance Sensors	Takahide Kubota	Tohoku University
PO-SE-031	Potential of two-dimensional fluorescence spectroscopy with entangled photons	Yuta Fujihashi	The University of Tokyo
PO-SE-032	Highly efficient exciton-exciton annihilation in single conjugated polymer chains	Nicola Jane Fairbairn	The University of Electro-Communications
PO-SE-033	Single tin-vacancy center in nanodiamond synthesized via detonation process	Masanori Fujiwara	Kyoto University

Poster 4

Quantum Sensing

July 30 17:10-18:30

Corridor to Grand Hall

Presentation ID	Presentation	Presenter	Affiliation
PO-SE-044	Efficient photoelectric single-spin detection in silicon carbide	Tetsuri Nishikawa	Kyoto University
PO-SE-045	Measurement of the time-resolved second-order correlation function in the two-dimensional time domain	Ozora Iso	The University of Electro-Communications
PO-SE-046	Development of milligram-scale optomechanical torsion pendulum : Towards quantum noise-level sensitivity II	Ryosuke Sugimoto	The University of Tokyo
PO-SE-047	Analyzing the photoactivation mechanism of photoactivated adenylate cyclase OaPAC by hybrid QM/MM simulation	Masahiko Taguchi	Tohoku University
PO-SE-048	Ultrafast biphoton time-frequency characterization with dual-comb-based optical sampling	Prasad Koviri	The University of Electro-Communications

Poster 5

Quantum Sensing

July 29 17:10-18:30

Lobby in front of Grand Hall

Presentation ID	Presentation	Presenter	Affiliation
PO-SE-034	Electric field strength measurement in THz frequency region using THz quantum transitions in Cs Rydberg-atoms	Motohio Kumagai	NICT
PO-SE-035	Sensitivity enhancement with nitrogen-vacancy centre pairs	Ernst David Herbschleb	Kyoto University
PO-SE-036	Architecture of network redundancy for optical frequency reference distribution using optical lattice clocks	Hiromitsu Imai	NTT
PO-SE-037	Hyperpolarized MRI theranostics of cancer	Yoichi Takakusagi	National Institutes for Quantum Science and Technology (QST)
PO-SE-038	Optimal laser power and time duration for Photocurrent-based AC magnetometry	Ei Shigematsu	Kyoto University
PO-SE-039	Theoretical Study on Decay of Quantum Resources in Triplet-Pair System Generated by Singlet Fission	Hajime Miyamoto	The University of Osaka
PO-SE-040	Real-Time Monitoring of Hydrolysis Reactions of Pyrophosphates towards elucidating Quantum Dynamical Selection	Jun Fukazawa	The University of Osaka
PO-SE-041	Optimization of diamond surface spin density for NV-NV entangled sensing.	Kosuke Kimura	Natinal Institute for Quantum Science and Technolog
PO-SE-042	Cryogenic signal processor for two-photon interference based on superconducting nanostrip single photon detectors	Shigeyuki Miyajima	National Institute of Information and Communications Technology
PO-SE-043	Magnetic field mapping of ferromagnetic nanowindows using NV-diamond magnetometry	Koki Takano	LNS, RIEC, Tohoku University

Poster 5

Quantum Sensing

July 30 17:10-18:30

Lobby in front of Grand Hall

Presentation ID	Presentation	Presenter	Affiliation
PO-SE-049	A Wide Class of Quantum States that Surpass the SQL of Metrology	Mamiko Tatsuta	Chuo University
PO-SE-050	Development of Multiplexed Superconducting Single Photon Detectors System	Shuhei Oba	Hamamatsu Photonics / National Institute of Information and Communications Technology
PO-SE-051	On-Chip Electron Spin Resonance Characterization of Surface Paramagnetic Defects on Superconducting Qubits	Yuki Nakashima	National Institute of Advanced Industrial Science and Technology (AIST)
PO-SE-052	Molecular dynamics analysis of photoredox cycle-associated structural changes of cryptochrome 4, a candidate protein for magnetoreception	Naoki Kimata	Waseda University
PO-SE-053	Photoelectrical response of divacancy-related defects in 4H-SiC	Naoya Morioka	Kyoto University

Presentation ID	Presentation	Presenter	Affiliation
PO-SE-054	Wavelength-division multiplexing of polarization-entangled photon source	Tomoya Okita	The University of Electro-Communications
PO-SE-055	1H Polarization above 60% at room temperature by Triplet Dynamic Nuclear Polarization	Kenichiro Tateishi	RIKEN
PO-SE-056	Heisenberg Limit of Interferometer Revisited	Masahiro Kitagawa	The University of Osaka
PO-SE-057	NV center engineering of nanodiamond by high temperature electron irradiation	Hiroshi Abe	National Institutes for Quantum Science and Technology (QST)
PO-SE-058	MTJs with low 1/f noise fabricated by MBE technique	Takayuki Hojo	Tohoku University

Memo

QuEL, Inc.

High-Density Qubit Controller
QuEL-3

Supporting over 1000-qubit system with Direct Digital Synthesis technology

Key Specifications

General

# of ports	12 outputs & 2 inputs
Connectors	SMA
Dimension	440 x 780 x 41 mm^3
Height	1U
Power Consumption	430 W

Outputs

Frequency range	0.5 GHz - 8.5 GHz
Sample rate	20 GSa/s
Bandwidth	4 GHz
Resolution	16 bit
Max output power	10 dBm
Noise floor	<-153 dBc/H
Phase Noise	<-120 dBc/Hz (@ 8 GHz, 10 kHz offset)

Inputs

Frequency range	0.5 GHz - 8.5 GHz
Sample rate	20 GSa/s
Bandwidth	2 GHz
Resolution	12 bit
Max input power	-25 dBm

QuEL, Inc. QuEL is a startup from the University of Osaka, developing qubit controllers.
QuEL has a strong track record in large-scale quantum computing systems, supporting Riken RQC's superconducting qubit systems (64-qubit system developed in 2023 and 144-qubit system developed in 2025). Additionally, QuEL also contributes to R&D of a variety of qubits, including neutral atoms, trapped ions, and silicon quantum dots.
QuEL is a team of quantum computer researchers, hardware engineer, and software engineers.
Please feel free to contact us if you have any requests or questions about qubit controllers.

https://quel-inc.com | info@quel-inc.com

SHIMADZU
Excellence in Science

「空を自由に飛べないか」。
「身体の中を写真に撮れないか」。
みなさまが思い描く夢を
叶えることができれば、世界は変わる。
人々に新しい幸福を届けることができる。
夢はいつも、未来の始まりでした。
「できるとすれば島津」。
その期待に応えるために私たちは科学技術を進化させ、
数々の夢、イノベーションの誕生に立ち会うことができました。
創業から150年。
あなたの夢に夢中になり
島津はいま、ここにある。

さぁ、次の夢へ。未来へ。
私たちは進化しつづけていきます。

今日はまだ、未来の途中だ。

2025
世界中のパートナーとともに
食肉に替わる培養肉や
がん細胞だけを破壊する
光免疫療法の開発に貢献

1961
世界初遠隔式X線
テレビジョン
システムの
販売開始

1877
初代 島津源蔵
民間初の有人軽気球の
飛揚に成功

1897
蓄電池の
製造に成功

1896
二代 島津源蔵
X線写真の撮影に成功
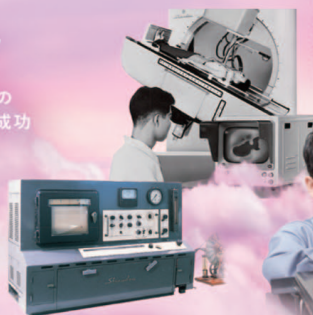
1956
日本初の
ガスクロマトグラフ
製品化に成功

2002
田中耕一
ノーベル化学賞受賞

2020
アルツハイマー病の
予測を目指す質量分析計の
医療機器承認を取得

150 Years of Innovation

150 YEARS
ANNIVERSARY

150周年記念
サイト公開中

株式会社 島津製作所　Shimadzu Corporation

LQUOM
Quantum Communication

Realizing a Quantum Society

Long-distance quantum communication leading quantum internet technology

With the quantum repeater currently under development, we aim to implement quantum internet on the global optical fiber network.

LQUOM technology enables long-distance quantum communication
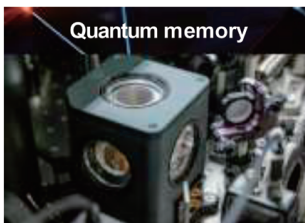
Quantum memory
Storing and Reproducing Quantum States

Quantum Frequency Conversion
Converting wavelength of a photons to another to be coupled with a quantum memory.

Frequency Stabilization
Matching the frequencies of remote photon sources and memories.
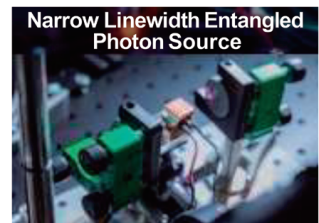
Narrow Linewidth Entangled Photon Source
Compatible with a quantum memory and telecommunication wavelength

Applications Brought by Quantum Communication

Quantum Cryptography

Distributed Quantum Computation

World Clock
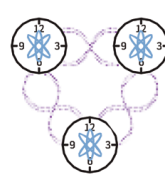
Blind Quantum Computation

LQUOM
Quantum Communication

LQUOM is a deep-tech startup originating from Yokohama National University, possessing essential technologies for building a quantum internet such as entangled photon source, quantum memory, wavelength conversion, and frequency stabilization.

LQUOM, Inc.

79-5 Tokiwadai, Hodogaya-ku, Yokohama-shi, Kanagawa 240-0067   7-7 Shin-kawasaki, Saiwai-ku, Kawasaki-shi, Kanagawa 212-0032

contact@lquom.com

Related Links

QUNASYS

Maximize The Power Of Quantum Computing

Expanding application frontiers and building practical foundations, QunaSys turns quantum computing into new industrial value —tackling real-world industry challenges, driving breakthrough innovations, and shaping the future through its power.

01 Research
Drive Business Change with Quantum Computing

02 Quantum Solution
Advance Quantum Algorithms and Software R&D

03 Chemical Research Solution
Redefine Materials Development

WHAT WE OFFER

01 | Research

Accelerating Business Transformation with Quantum Computing

We are committed to driving the industrial adoption of quantum technologies as a powerful force for solving society's key challenges.

Chemical Simulation
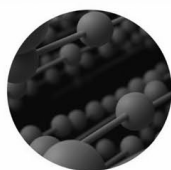
Condensed Matter Simulation
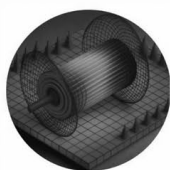
Computer-Aided Engineering

02 | Quantum Solution

Opening the Door to Quantum Computing

We are building a complete software stack — from low-level architecture to high-level applications — to help more users unlock the full potential of quantum computing.

QURI SDK

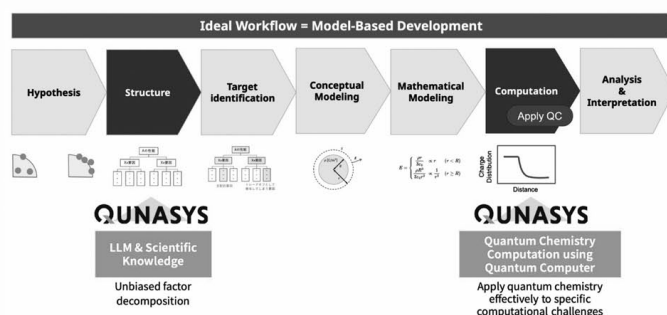|	
Application	**QURI** ALGO
Algorithm	Ready-to-use algorithm components/ framework
Quantum Circuit (Optimiation)	**QURI** PARTS — Fundamental building blocks for QURI SDK
(E) FTQC architecture	**QURI** VM — Architecture/ Device abstraction Analysis/Optimization Simulation/Execution
Hardware	(Partnering with hardware developers)
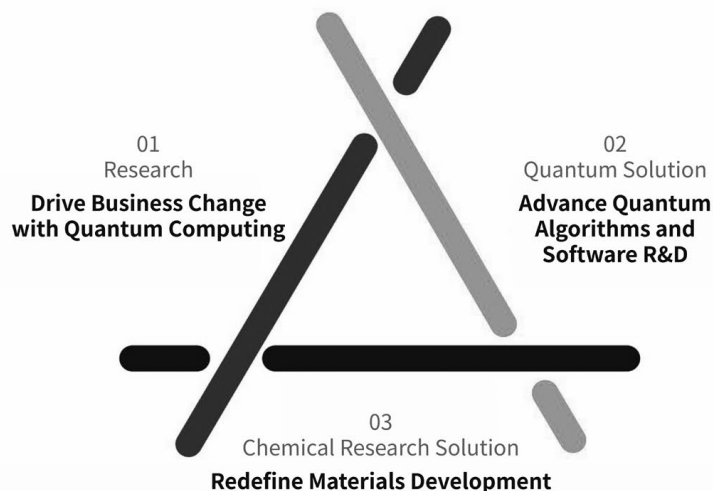
03 | Chemical Research Solution

Transforming the Way We Develop Materials

We help you build a computation-ready environment and seamlessly integrate computational chemistry into your workflow.
Step away from intuition-based trial-and-error — and move toward data-driven innovation.

Ideal Workflow = Model-Based Development

Hypothesis → Structure → Target identification → Conceptual Modeling → Mathematical Modeling → Computation (Apply QC) → Analysis & Interpretation

QUNASYS — LLM & Scientific Knowledge — Unbiased factor decomposition

QUNASYS — Quantum Chemistry Computation using Quantum Computer — Apply quantum chemistry effectively to specific computational challenges

QPARC

Growing the Quantum Ecosystem

QPARC is a community that brings together industry and academia to exchange insights, explore possibilities, and drive real-world implementation of quantum computing.

Connect
Join a community of quantum experts developing real-world applications

Learn
Level up your skills and stay updated with leading experts in the field

Transform
Understand quantum performance and bring potential advantage to your industry

Where Limits End and
Possibilities Dawn

QUANTINUUM
HELIOS

A next-generation Quantinuum System, **Helios**, continues the evolution of system performance and provides premier quantum computing capabilities, including world-leading two-qubit gate fidelity of 99.95% with all-to-all connectivity.

Empowering users to solve classically intractable problems and explore the hybrid classical-quantum application space, Helios will be available as a Hardware-as-a-Service (HaaS) offering featuring onsite deployment, as well as cloud access in 2025.

96
physical qubits

99.95%
two-qubit gate fidelity

Faster circuit time
with new chip design

Lower resources
required per qubit

Helios is available now for pre-order →

Scan the QR code for more information

○ QUANTINUUM

Q-STAR

Quantum STrategic industry Alliance for Revolution

About Q-STAR

Established in Japan in September 2021, Q-STAR (Quantum STrategic industry Alliance for Revolution) unites startups, SMEs, large corporations, and academic institutions to forge new industries and business opportunities through quantum technology. Q-STAR actively seeks global collaborations across sectors to collectively advance the field.

Toward Global Leadership in the Future Quantum Industry

Q-STAR contributes to establish Japan's leadership with three strategies.

Use Cases

Vendor and user companies collaborate to discuss and validate use cases.

A wide range of use case discussions

Selected use cases from the discussions were incorporated into the industry roadmap.

Test Beds

Working toward early social implementation by demonstrating use cases in a real-world environment through collaboration on a testbed with G-QuAT.

Source: https://unit.aist.go.jp/g-quat/index.html
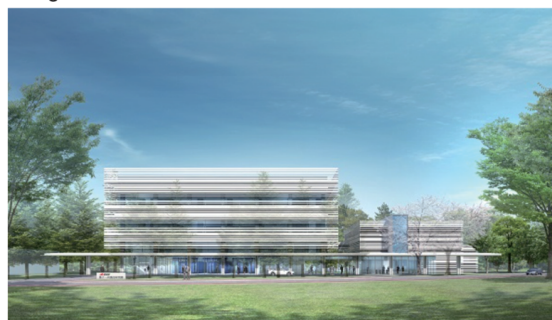
Standardization
Frameworks that connect technology to business.

Q-RAMI

- Overview of the entire pathway toward social implementation
- Shared understanding among stakeholders

Dimension 2
（アーキテクチャレイヤ）

Business
Interface
Functional
Information
Communication
Integration
Asset （incl.labor)
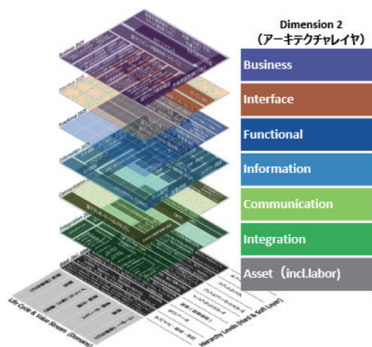
Software Stack Diagram

- Exploring quantum solutions to societal challenges
- Identifying potential use cases
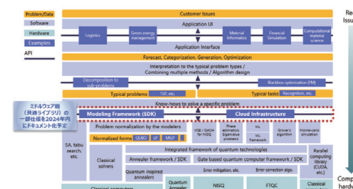
Contact

Q-STAR(The Quantum STrategic Industry Alliance for Revolution)
Office within Vision Bridge , LLC

Shin-Kagurazaka Building 2F, 43 Tansumachi, Shinjuku-ku Tokyo 162-0833, Japan
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Mail : info.qstar@supportoffice.jp   HP(JP) : https://qstar.jp/   HP(EN): https://qstar.jp/en   HP(EN)   LinkedIn