QI 2025 SIP3 Special Session

Promoting Application of Advanced Quantum Technologies to Social Challenges

— Toward Future Quantum Society —

on https://www.qst.go.jp/site/sip3-en/qi2025-sip3quantum.html

8:40 Opening (Chair: Y. Hirayama, QST, PM/Sub PD(SIP3 quantum))

T. Sogawa（NTT, PD(SIP3 quantum), Japan） “Opening Remarks”

8:55 Plenary 1 (Chair: G. Hanaoka, AIST, Sub PD,(SIP3 quantum))

Chune Yang Lum (SpeQtral, Singapore) Securing Global Networks in the Quantum Era

9:25 Session 1 Quantum Security and Network (Chair: G. Hanaoka, AIST, Sub PD,(SIP3 quantum))

Mikio Fujiwara (NICT, Japan) Quantum secure cloud technology for establishing highly confidential data centers

Shinya Murai (Toshiba Digital Solutions Corporation, Japan) Applications for quantum secure cloud

-Break 15min.-

10:20 Plenary 2 (Chair: M. Horibe, AIST, Sub PD,(SIP3 quantum))

Juha Vartiainen (IQM Quantum Computers、Finland) Towards Quantum-Accelerated Supercomputing - A Europe-Japan Perspective

10:50 Session 2 Quantum Computing (Chair: M. Horibe, AIST, Sub PD(SIP3 quantum))

Shinichi Yorozu (RIKEN, Japan) System operation technology for the quantum computer ‘A’ testbed

Shunya Minami (AIST, Japan) Quantum circuit generation with transformer-based generative AI

-Lunch 90min.-

13:00 Plenary 3 (Chair: S. Okada, Q-STAR, Sub PD(SIP3 quantum))

Heike Riel (IBM, Switzerland) Next-Gen Computing – Bits, Qubits, and Neurons Unite

13:30 Session 3 Innovation Creation Platform (Chair: S. Okada, Q-STAR, Sub PD(SIP3 quantum))

Masayuki Ohzeki (Tohoku Univ., Japan)　Creation of a platform “Quantum Universe"

Shinya Ogata (SKILLUP NeXt, Ltd., Japan)　Challenges in the development of the quantum workforce

-Break 15min.-

14:25 Session 4 Quantum Sensing (Chair: T. Ohshima, QST, Sub PD(SIP3 quantum))

Ryuji Igarashi (QST, Institute of Science Tokyo, Tohoku University, Chiba University, Japan)
Nanoscale quantum sensors for ultra-sensitive body fluid diagnostics: toward a quantum liquid biopsy platform

Makoto Negoro (QST, The University of Osaka, Japan)　Application of room temperature hyperpolarization

Katsuhiro Kutsuki（Toyota Central R&D Labs., Inc., Japan）　SiC-based quantum sensors for automobile application

15:25 Closing