

2021 International Conference on Quantum Computing

July 1~2, 2021 (On/Offline meeting)

The ICQC2021 conference will focus on quantum information processing, computing and communication, an interdisciplinary field bridging quantum physics, computer science, mathematics, and information technologies.

ICQC2021 will consist of keynote, invited talks, and industry session.

Contributions are solicited in (but not limited to) the following areas:

- Quantum computation and simulation, algorithms and complexity
- Quantum information theory
- Quantum technologies
- Quantum processor and computer design
- Quantum communication and cryptography
- Quantum metrology

Registration

The ICQC2021 will have a hybrid character: both online and offline

* ONLY small number of attendees will join at the conference site under strict conditions

(Please visit <http://www.quist.or.kr/conference/default.asp> for the registration)

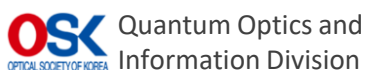
Organizing and Program committee

Dong Pyo Chi (SNU, UNIST) Co-Chair, Organizing committee	Jaewan Kim (KIAS) Co-Chair, Organizing committee	Wonmin Son (Sogang U) Chair, Program committee
Dohun Kim (SNU)	Gil-Ho Lee (POSTECH)	Han Seb Moon (PNU)
Jae-yoon Choi (KAIST)	Je-Hyung Kim (UNIST)	Jeongho Bang (ETRI)
Jinhyoung Lee (Hanyang U)	Jongchul Mun (KRISS)	Joonsuk Huh (SKKU)
Junghee Ryu (KISTI)	Mi-Yeon Kim (KT)	Moonjoo Lee (POSTECH)
Sang-Wook Han (KIST)	Seung-Woo Lee (KIST)	Soojoon Lee (Kyung Hee U)
Taehyun Kim (SNU)	Yong-Su Kim (KIST)	Yonuk Chong (SKKU)
Yoonchae Cheong (NRF)		

Organized by
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Hosted by
(공동주관)



※ Contact: quantum.information.st@gmail.com (QuIST)

Keynote Speaker

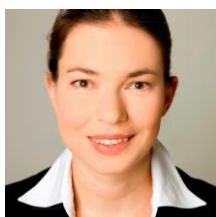


Yoon-Ho Kim

Professor at POSTECH

Quantum Optics & Quantum Information

Industry Highlights



Eva Weig

Professor at TU Munich

Chair of Nano and Quantum Sensors



Jungsang Kim

Professor at Duke U

Co-Founder & CTO of IonQ



William D. Oliver

Professor at MIT

PI in the Engineering Quantum Systems Group

Industry Session

EUROPE

Lee-Ann Ramcherita (Airbus)

Felix Bussieres (ID Quantique)

Sven Kerstan (JoS Quantum)

Leonard Wossnig (Rahko)

USA

Krista Svore (Microsoft)

Christopher Savoie (Zapata)

Wim van Dam (QC Ware)

Michele Mosca (SoftwareQ/EvolutionQ)

Program schedule

July 1st (Thu) Keynote Industry

Time	Title	Speaker
08:20 ~ 08:30	Opening	Jaewan Kim (KIAS)
08:30 ~ 09:00	Single-photon detector and qubit based on two-dimensional materials	Kin Chung Fong (Raytheon BBN Tech)
09:00 ~ 09:20	Engineering graphene Josephson junction for sensitive photon detector	Gil-Ho Lee (POSTECH)
09:20 ~ 09:50	Integrated Quantum Photonics	Edo Waks (U of Maryland)
09:50 ~ 10:10	Temporal and spatial shaping of single photons from cavity-integrated single quantum dots	Je-Hyung Kim (UNIST)
10:10 ~ 10:20	Break (10 min)	
10:20 ~ 10:50	Light Matter Interactions and Quantum Confinement in 2D Semiconductors	Deep Jariwala (U of Pennsylvania)
10:50 ~ 11:10	Defects and Quantum Confinement in Two-dimensional Materials	Joonki Suh (UNIST)
11:10 ~ 11:40	Toward Universal Quantum Computing using Parafermions: Induced Superconductivity in the Fractional Quantum Hall Edge	Philip Kim (Harvard U)
11:40 ~ 12:00	Moire Exciton-Polariton for Quantum Simulation	Young Duck Kim (Kyung Hee U)
12:00 ~ 13:20	Lunch (80 min)	
13:20 ~ 13:50	Disorder-induced Thouless pumping of ultracold atoms in an optical lattice	Yoshiro Takahashi (Kyoto U)
13:50 ~ 14:10	Quantum gas microscope of Bosonic ⁷ Li atoms with tunable interactions	Jae-yoon Choi (KAIST)
14:10 ~ 14:30	Non-trivial simulation of quantum correlation in many-body systems	Wonmin Son (Sogang U)
14:30 ~ 15:00	Quantum networks based on trapped-ion quantum computers	Tracy E. Northup (U Innsbruck)
15:00 ~ 15:10	Break (10 min)	
15:10 ~ 16:00	Quantum interferometry and generalized quantum measurement for quantum information science	Yoon-Ho Kim (POSTECH)
16:00 ~ 16:10	Break (10 min)	
16:10 ~ 16:50	Spectral evidence of squeezing in a driven, nonlinear nanomechanical resonator	Eva Weig (TU Munich)
16:50 ~ 17:00	Break (10 min)	
17:00 ~ 17:20	Airbus Quantum Computing Challenge-Bringing Flight Physics into the Quantum Era	Lee-Ann Ramcherita (Airbus)
17:20 ~ 17:40	Photon-number resolved detection for QRNG chips and optical quantum simulation	Felix Bussieres (ID Quantique)
17:40 ~ 18:00	Quantum Risk Sensitivity Analysis	Sven Kerstan (JoS Quantum)
18:00 ~ 18:20	Quantum Drug Discovery: How quantum computing can improve rational drug design	Leonard Wossnig (Rahko)
18:20 ~ 19:00	Panel Discussion	

Time	Title	Speaker
08:40 ~ 08:50	Introduction	
08:50 ~ 09:30	Commercial Quantum Computing with Trapped Ions	Jungsang Kim (IonQ & Duke U)
09:30 ~ 10:10	Quantum Engineering of Superconducting Qubits	William D. Oliver (MIT)
10:10 ~ 10:20	Break (10 min)	
10:20 ~ 10:40	Pioneering advances for industrial-scale quantum acceleration	Krista Svore (Microsoft)
10:40 ~ 11:00	Quantum Enhanced Machine Learning for Enterprise Applications	Christopher Savoie (Zapata)
11:00 ~ 11:20	Quantum Optimization Heuristics and their Applications	Wim van Dam (QC Ware)
11:20 ~ 11:40	Prospering in the quantum era	Michele Mosca (SoftwareQ/EvolutionQ)
11:40 ~ 12:20	Panel Discussion	
12:20 ~ 13:30	Lunch (70 min)	
13:30 ~ 14:00	Engineering qubits in silicon with atomic precision	Michelle Simmons (UNSW)
14:00 ~ 14:30	Coherent manipulation of strongly correlated electron states in GaAs quantum dots	Dohun Kim (SNU)
14:30 ~ 15:00	Device Independent Quantum Key Distribution with Random Basis	Koon Tong Goh (CQT)
15:00 ~ 15:30	Constructing high-dimensional quantum key distribution against side-channel attacks	Yonggi Jo (ADD)
15:30 ~ 15:40	Break (10 min)	
15:40 ~ 16:10	Photonic quantum computational advantage	Chao-Yang Lu (USTC)
16:10 ~ 16:40	Demonstration of complete global trade-off relations in quantum measurement	Hyang-Tag Lim (KIST)
16:40 ~ 17:10	Analog Quantum Simulation of Non-Condon Effects in Molecular Spectroscopy	Joonsuk Huh (SKKU)
17:10 ~ 18:00	Closing	