

# Photonic Quantum Sensing SEMINAR

## “Practical Quantum Computing and Simulation with Trapped Ions”

Prof. Jungsang Kim (Ph.D. )

ECE and Physics, Duke Quantum Center, Duke University



Date

Tue. June 17, 2025

Time

14:00-15:30

Hybrid

A1-313, Katsura campus/ Zoom

Registration

<https://x.gd/dBgDV>

Deadline:  
June 16

The hyperfine qubits in trapped atomic ions represent an ideal physical platform to store and manipulate qubits. I will discuss the advantages of this system for building practical quantum computers and simulations based on the basic physical principles, and recent technological developments that enabled construction of reliable quantum computing system capable of commercial deployment. I will share some examples of quantum algorithms and applications development on these systems, that could lead to practical applications in the near term. I will conclude by discussing future prospect of reaching quantum advantage on computational or simulation tasks using trapped ion systems.

Organizer: Photonic Quantum Sensing Science and Engineering Center

Co-organizer: ERATO Takeuchi, QLEAP, WISE Program “Innovation of Advanced Photonic and Electronic Devices”, Kyoto University

Chair: Shigeki Takeuchi (Department of Electronic Science and Engineering, Kyoto University)

Contact: [pqs@qip.kuee.kyoto-u.ac.jp](mailto:pqs@qip.kuee.kyoto-u.ac.jp)