

# Call for Papers

## Quantum Networks and Computing (QNC) Symposium

*The 21<sup>st</sup> International Conference on Wireless Communications and Mobile Computing*

Website: <http://iwcmc.org/2025/>

Submission Link: <https://edas.info/newPaper.php?c=32919>

Technically Sponsored by IEEE and IEEE UAE Section

**May 12-16, 2025, Abu Dhabi, UAE**

### Chairs:

Ruidong Li, Kanazawa University, Japan, [liruidong@gmail.com](mailto:liruidong@gmail.com)

Jian Li, University of Science and Technology of China, China, [lijian9@ustc.edu.cn](mailto:lijian9@ustc.edu.cn)

Joonwoo Bae, Korea Advanced Institute of Science and Technology, Korea, [joonwoo.bae@kaist.ac.kr](mailto:joonwoo.bae@kaist.ac.kr)

### Scope

Quantum Networks and Computing (QNC) are expected to transform information processing and communication by leveraging the unique properties of quantum mechanics. These networks can enhance data security and enable distributed quantum computing applications to solve problems beyond the reach of current computer systems. In recent years, the rapid advancement of physical devices, such as quantum repeaters and quantum memory, has built a solid foundation for quantum network implementation. As an indispensable infrastructure, quantum networks enable cutting-edge quantum applications including quantum secure communications and distributed quantum computing. However, the inherent limitations of quantum systems, such as decoherence and fragility, pose critical challenges to the development of QNC. This symposium encourages interdisciplinary collaboration to bridge the gap from theoretical analysis to practical implementation, thereby paving the way for the future development of QNC. The goal of this symposium is to provide a peer-to-peer communication platform for academic researchers, industry professionals, and policymakers to share state-of-the-art experimental results, contribute novel technical designs, and exchange insightful views.

### Topics

Accepted papers will be published in the IEEE IWCMC 2025 proceedings and will be submitted to the IEEE digital library (IEEE Xplore). Authors are welcome to submit original papers (not published before and/or simultaneously to another venue) with topics that include but are not limited to:

- Quantum Networks and Quantum Internet
- Quantum Computing, Algorithms, and Applications
- Quantum Information Theory
- Quantum Repeaters, Switches, and Routers
- Entanglement Generation, Scheduling, and Distribution
- Entanglement Purification and Distillation
- Quantum Error Correction
- Quantum Network Coding
- Quantum Cryptography and Cybersecurity
- Quantum Key Distribution Network
- Quantum Network Architectures and Protocols
- Quantum Simulation
- Quantum Machine Learning

- Quantum Circuit Design
- Noisy Intermediate-Scale Quantum (NISQ) Devices
- Quantum Hardware
- Hybrid Quantum-Classical Systems

Submitted papers are encouraged to address novel technical challenges or industrial and standard aspects of the key technologies for sustainable and secure cognitive buildings/cities.

## **Important Dates**

Same deadlines as the main conference dates.

Note: Within this workshop, there will be one Best Paper Award.