1st QUANTUMINFOTECH 2026

International Symposium on Quantum Information Science and Enabling Technologies

"From Quantum Materials to Quantum Intelligence"

⚛ **QuantumInfoTech 2026**

International Symposium on Quantum Information Science and Enabling Technologies

Theme: "From Quantum Materials to Quantum Intelligence"

April 5-7, 2026

🎯 **Symposium Overview**

QuantumInfoTech 2026 brings together leading researchers, engineers, and innovators working at the intersection of **quantum physics**, **materials science**, and information technologies. This symposium highlights how quantum principles revolutionize **computation**, **communication**, **sensing**, and **intelligent systems**.

Through a multidisciplinary dialogue spanning **quantum theory**, **experimental platforms**, and **engineering applications**, it aims to catalyze the transition of quantum technologies from fundamental research to real-world deployment.

🧩 **Symposium Tracks**

🌐 **Track 1 – Foundations & Architectures of Quantum Information**

• Quantum bits (qubits): physical realizations & coherence control
• Superconducting, trapped-ion & spin-based quantum systems
• Quantum gates, error correction & decoherence mitigation

• Hybrid quantum–classical architectures
• Scalable quantum processors & cryogenic technologies

🧲 Track 2 – Quantum Materials & Nanodevices

• Topological insulators, Majorana fermions & spin qubits
• 2D and van der Waals materials for quantum applications
• Quantum dots, color centers & single-photon emitters
• Nanofabrication and quantum control at the nanoscale
• Quantum phase transitions & entanglement in materials

🔒 Track 3 – Quantum Communication & Cryptography

• Quantum key distribution (QKD) & the quantum internet
• Entanglement distribution & teleportation protocols
• Quantum repeaters & long-distance secure communication
• Photonic integrated circuits for quantum networks
• Post-quantum encryption & advanced security architectures

💻 Track 4 – Quantum Computing & Algorithms

• Quantum machine learning & optimization algorithms
• Variational quantum eigensolvers (VQE) & quantum simulation
• Quantum chemistry & materials modeling
• Quantum annealing & hybrid frameworks
• Quantum software toolkits, compilers & programming environments

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🔬 Track 5 – Quantum Sensing, Metrology & Applications

• Quantum magnetometers, gravimeters & atomic clocks
• NV centers in diamond for biosensing & nanoscale imaging
• Quantum-enhanced spectroscopy & microscopy
• Biomedical & environmental quantum sensing
• Industry translation of quantum sensors & detectors