

On-Chip Single-Photon Quantum Technology

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Quantum technology employs the ‘spooky’ phenomena of quantum physics such as superposition, randomness and entanglement to process information in a novel way. Quantum photonics provides a promising path for both exploring fundamental physics and delivering quantum-enhanced technologies. In this talk, I will introduce our recent work on developing functional nodes for quantum information processing based on integrated optics architecture, including high-quality entangled photon-pair source, precise control of photonic qudits and rapid single-photon detectors.