

Photonic Quantum Computing

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Of the various approaches to quantum computing, photons are appealing for their low-noise properties and ease of manipulation at the single qubit level; while the challenge of entangling interactions between photons can be met via measurement induced non-linearities. However, the real excitement with this architecture is the promise of ultimate manufacturability: All of the components---inc. sources, detectors, filters, switches, delay lines---have been implemented on chip, and increasingly sophisticated integration of these components is being achieved. We will discuss the opportunities and challenges of a fully integrated photonic quantum computer.