



The Integrated Quantum Photonics Roadmap

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Advances in integrated photonics over the last couple of decades have enabled more than 2,000 components to be integrated on a single chip for quantum computing, communications, and sensing. However, future progress will require going beyond chip-scale by networking many photonics chiplets with specialized functions, which also requires heterogeneous or hybrid integration that can take advantage of different materials. In this webinar, I'll introduce the field of integrated quantum photonics, discuss how we define, generate, manipulate, and detect photonic quantum states, and give examples of state-of-the-art implementations for applications in quantum computing and communications. I will also highlight emerging directions in quantum photonics including chip-scale quantum sensors for fundamental science and space-based applications.