

Abstract Submitted
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Title: Development of Single photon Quantum Optical Experiments using Type-I and Type-II Spontaneous Parametric Down Conversion ANDREW LAUGHARN, SEYFOLLAH MALEKI, Union College — We constructed a quantum optical apparatus to control and detect single photons. We generated these photons via Type-I and Type-II spontaneous parametric down conversion by pumping a GaN laser (405nm) incident on a BBO crystal. We detected the two down converted photons (810nm), denoted signal and idler, in coincidence so as to measure and control single photons. We implemented a coincidence counting unite onto an Altera DE2 board and used LabView for data acquisition. We used these photon pairs to demonstrate quantum entanglement and indistinguishability using multiple optical experiments.

Shauna LeFebvre
Union College

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