

Abstract Submitted
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Spectral study of type-0/type-I spontaneous parametric down-conversion in a PPKTP waveguide¹ JUN CHEN, AARON PEARLMAN, ALEXANDER LING, ALAN MIGDALL, JINGYUN FAN, Joint Quantum Institute, National Institute of Standards and Technology, and University of Maryland, JOINT QUANTUM INSTITUTE, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, AND UNIVERSITY OF MARYLAND TEAM — Compared with their bulk-crystal counterparts, SPDC in second-order ($\chi^{(2)}$) nonlinear optical waveguides has been used to generate correlated photons that are naturally emitted into a single spatial mode in a collinear geometry, easing the effort in efficient photon collection and leading the potential to make chip-scale devices for quantum-information-processing applications. Here towards building chip-scale devices for quantum-information-processing applications, we performed the first spectral characterization of correlated two-photon, and single-photon emission for both type-0 and type-I spontaneous parametric down-conversion (SPDC) in a periodically-poled KTiOPO_4 (PPKTP) waveguide.

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