

Quantum Physics

Integrated optical source of polarization entangled photons at 1310 nm

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We report the realization of a new polarization entangled photon-pair source based on a titanium-indiffused waveguide integrated on periodically poled lithium niobate pumped by a CW laser at 655 nm. The paired photons are emitted at the telecom wavelength of 1310 nm within a bandwidth of 0.7 nm. The quantum properties of the pairs are measured using a two-photon coalescence experiment showing a visibility of 85%. The evaluated source brightness, on the order of 10^5 pairs $s^{-1} GHz^{-1} mW^{-1}$, associated with its compactness and reliability, demonstrates the source's high potential for long-distance quantum communication.

Comments: There is a typing mistake in the previous version in the visibility equation. This mistake doesn't change the results

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