Hollow-core optical fiber for quantum communication

This research demonstrates a significant advance in quantum communication through the successful transmission of single photons via a specially engineered hollow-core fibre.

We experimentally demonstrate the coexistence of three entanglement-based quantum channels with carrier-grade classical optical channels over 11.5 km hollow core nested antiresonant...

In this letter, we propose and demonstrate a novel approach using hollow-core fibers (HCFs) with widely separated low-loss windows to transmit strong classical light at 1550 nm alongside QD single ...

In this paper, we present a quantum-secured optical fronthaul architecture utilizing hollow-core fiber and propose op-timized wavelength allocation for classica

Hollow-core fiber (HCF) promises to unify air-borne light propagation and non-line-of-sight transmission, thus holding great potential for versatile photonics-based quantum information...

They achieved high-quality entanglement distribution, Bell state measurement, coherence, and quantum state transfer without channel feedback, marking hollow-core fiber channels as a ...

We experimentally demonstrate the coexistence of quantum key distribution and classical communications over a 20 km hollow-core fiber, achieving a record distance in the coexistence ...

We address this by employing a hollow-core fiber engineered for low-loss transmission at quantum dot wavelengths, with measured loss of 0.65 dB/km and potentially as low as 0.12 dB/km ...

Hollow core fibres (HCFs) are emerging as a revolutionary technology for quantum communications, particularly in the distribution of single-photon-based quantum keys. Recent ...

The low loss, low latency, and low dispersion of hollow-core fibers make these fibers particularly attractive for both short- and long-distance links in quantum networks. Hollow-core fibers ...

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